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U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
LABORATORY TEST PROCEDURE
FOR
FMVSS 403
Platform Lift Systems for Motor Vehicles



ENFORCEMENT
Office of Vehicle Safety Compliance
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**OVSC LABORATORY TEST PROCEDURE NO. 403
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REVISION CONTROL LOG
FOR OVSC LABORATORY TEST PROCEDURE

TP-403, Platform Lift Systems for Motor Vehicles

TEST PROCEDURE		FMVSS 403		
REV. No.	DATE	AMENDMENT	EFFECTIVE DATE	
00	4/1/2005	67FR79416 12/27/02	12/27/04	Final rule
		69FR58843 10/1/04	12/27/04	Final rule – response to petitions for reconsideration.
		69FR76865 12/23/04	4/1/05	Final rule
01	12/30/2008	-----	-----	Technical corrections to compliance test execution and data sheets.
02				
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1. PURPOSE AND APPLICATION

This document is a laboratory test procedure provided by the National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC) for the purpose of presenting guidelines for a uniform testing data and information recording format, and providing suggestions for the use of specific equipment and procedures for contracted testing laboratories. The data correspond to specific requirements of the Federal Motor Vehicle Safety Standard(s) (FMVSS). The OVSC test procedures include requirements that are general in scope to provide flexibility for contracted laboratories to perform compliance testing and 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. These test procedures do not constitute an endorsement or recommendation for use of any particular product or testing method.

Prior to conducting compliance testing, contracted laboratories are required to submit a detailed test procedure to the Contracting Officer's Technical Representative (COTR) to demonstrate concurrence with the OVSC laboratory test procedure and the applicable FMVSS. 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 COTR and resolve the discrepancy prior to the start of compliance testing or as soon as practicable. The contractor's test procedure must include a step-by-step description of the methodology and detailed check-off sheets. Detailed check-off sheets shall also be provided for the testing instrumentation including a complete listing of the test equipment with make and model numbers. The list of test equipment shall include instrument accuracy and calibration dates. All equipment shall be calibrated in accordance with the manufacturer's instructions. There shall be no contradictions between the laboratory test procedure and the contractor's in-house test procedure. Written approval of the in-house test procedures shall be obtained from the COTR before initiating the compliance test program.

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

Federal Motor Vehicle Safety Standard (FMVSS) No. 403 specifies performance requirements for platform lift systems used to assist persons with limited mobility in entering or leaving a vehicle. Each platform lift must comply with the requirements for either private use lifts or public use lifts. The chart below details some of the different requirements unique to public use and private use lifts.

REQUIREMENT	PUBLIC-USE	PRIVATE USE	SECTION
Threshold Warning	Visual AND Audible signal	Visual OR Audible signal	S6.1
Operating Volume	Required Minimum	Manufacturer Specified	S6.4.2
Platform Surface Protrusions	None > 0.25"	None > 0.5"	S6.4.3
Inner Roll Stop	Required	Not Required	S6.4.8.2
Handrails	Required	Not Required	S6.4.9
Platform Marking	1" outlines, 60% contrast	Not Required	S6.4.10
Fatigue Endurance	15,600 cycles	4,400 cycles	S6.5.1
Standard Load	600 lbs	400 lbs or manufacturers rated load (whichever is greater)	S4
Proof Load	3x the standard load	3x the standard load	S6.5.2
Ultimate Load	4x the standard load	4x the standard load	S6.5.3
Control Panel Switches	Control characters illuminated when headlights are on	Not Required	S6.7.6.2
Interlocks	Required	Required	S6.10
Operations Counter	Required	Required	S6.11
Labels *	"DOT - Private Use Lift"	"DOT - Public Use Lift"	
Vehicle's Owners Manual Insert	Required	Required, needs loading info, Operating Volume	S6.12
Noise Maximum	80 dBA max	Not Required	S6.2.4
Installation Instructions	"DOT - Public Use Lift" on the front cover of the installation instructions	"DOT - Private Use Lift" on the front cover of the installation instructions	S6.13

* on the lift, operating instructions, and cover of the lift insert for the owners manual

A related safety standard is FMVSS No. 404. FMVSS No. 404 specifies requirements for vehicles equipped with platform lifts used to assist persons with limited mobility in entering or leaving a vehicle.

METRIC SYSTEM OF MEASUREMENT

Section 5164 of the Omnibus Trade and Competitiveness Act (Pub. L. 100-418) establishes that the metric system of measurement is the preferred system of weights and measures for trade and commerce in the United States. Executive order 12770 directs Federal agencies to comply with the Act by converting regulatory standards to the metric system after September 30, 1992. In a final rule published on March 15, 1990 (60 FR 13639), NHTSA completed the first phase of metrication, converting English measurements in several regulatory standards to

2. GENERAL REQUIREMENTS....Continued

the metric system. Since then, metrication has been applied to other regulatory standards (63 FR 28912).

Accordingly, the OVSC laboratory test procedures include revisions to comply with governmental directives in using the metric system. Regulatory standards converted to metric units are required to use metric measurements in the test procedures, whereas standards using English units are allowed to use English measurements or to use English measurements in combination with metric equivalents in parentheses. For any testing equipment that is not available for direct measurement in metric units, the test laboratory shall calculate the exact metric equivalent by means of a conversion factor carried out to at least five significant digits before rounding consistent with the specified metric requirement.

All final compliance test reports are required to include metric measurements for standards using metrication.

NOTE: The methodology for rounding measurement in the test reports shall be made in accordance with ASTM E29-06b, "Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications."

3. SECURITY

The contractor shall provide appropriate security measures to protect the OVSC test vehicles and Government Furnished Property (GFP) from unauthorized personnel during the entire compliance testing program. The contractor is financially responsible for any acts of theft and/or vandalism which occur during the storage of test vehicles and GFP. Any security problems which arise shall be reported by telephone to the Industrial Property Manager (IPM), Office of Acquisition Management, within two 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 48 hours.

The contractor shall protect and segregate the data that evolves from compliance testing before and after each vehicle test. 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 Division Chief.

NOTE: No individuals, other than contractor personnel directly involved in the compliance testing program or OVSC personnel, shall be allowed to witness any vehicle or equipment item compliance test or test dummy calibration unless specifically authorized by the COTR.

4. GOOD HOUSEKEEPING

Contractors shall maintain the entire vehicle compliance testing area, 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 conducting the first compliance test. Tests shall be completed at intervals as required in the contract. If not specified, the first test shall be conducted within 6 weeks after receiving the first delivered unit. Subsequent tests shall be completed in no longer that 1 week intervals unless otherwise specified by the COTR.

Scheduling of tests shall be adjusted to permit vehicles (or equipment, whichever applies) to be tested to other FMVSSs as may be required by the OVSC. All compliance testing shall be coordinated with the COTR in order to allow monitoring by the COTR and/or other OVSC personnel if desired. The contractor shall submit a monthly test status report and a vehicle status report (if applicable) to the COTR. The vehicle status report shall be submitted until all vehicles are disposed of. The status report forms are provided in the forms section.

6. TEST DATA DISPOSITION

The Contractor shall make all preliminary compliance test data available to the COTR on location within 30 minutes after the test. Final test data, including digital printouts and computer generated plots (if applicable), shall be available to the COTR in accordance with the contract schedule or if not specified within two working days. Additionally, the Contractor shall analyze the preliminary test results as directed by the COTR.

The test data shall be retained by the contractor for a minimum of 3 years after the conclusion of each delivery order, purchase order, etc. The COTR shall direct final disposition at that time.

The contractor shall protect and segregate the data that evolves from compliance testing before and after each test.

TEST DATA LOSS

A. INVALID TEST DESCRIPTION

An invalid compliance test is one, which does not conform precisely to all requirements/specifications of the OVSC Laboratory Test Procedure and Statement of Work applicable to the test.

B. INVALID TEST NOTIFICATION

The Contractor shall notify NHTSA of any test not meeting all requirements/specifications of the OVSC Laboratory Test Procedure and Statement of Work applicable to the test, by telephone, within 24 hours of the test and send written notice to the COTR within 48 hours or the test completion.

6. TEST DATA DISPOSITION....Continued

C. RETEST NOTIFICATION

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 2 weeks after receipt of notification by the Contracting Officer that a retest is required.

D. WAIVER OF RETEST

NHTSA, in its sole discretion, reserves the right to waive the retest requirement. This provision shall not constitute a basis for dispute over the NHTSA's waiving or not waiving any requirement.

E. TEST VEHICLE

NHTSA shall furnish only one vehicle for each test ordered. The Contractor shall furnish the test vehicle required for the retest. The retest vehicle shall be equipped as the original vehicle. The original vehicle used in the invalid test shall remain the property of NHTSA, and the retest vehicle shall remain the property of the Contractor. The Contractor shall retain the retest vehicle for a period not exceeding 180 days if it fails the test. If the retest vehicle passes the test, the Contractor may dispose of it upon notification from the COTR that the test report has been accepted.

F. TEST REPORT

No test report is required for any test that is determined to be invalid unless NHTSA specifically decides, in writing, to require the Contractor to submit such report. The test data from the invalid test must be safeguarded until the data from the retest has been accepted by the COTR. The report and other required deliverables for the retest vehicle are required to be submitted to the COTR within 3 weeks after completion of the retest.

G. DEFAULT

The Contractor is subject to the default and subsequent re-procurement costs for non-delivery of valid or conforming test (pursuant to the Termination For Default clause in the contract).

H. NHTSA'S RIGHTS

None of the requirements herein stated shall diminish or modify the rights of NHTSA to determine that any test submitted by the Contractor does not conform precisely to all requirements/specifications of the OVSC Laboratory Test Procedure and Statement of Work applicable to the test.

7. GOVERNMENT FURNISHED PROPERTY (GFP):

A. ACCEPTANCE OF TEST VEHICLES

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

1. All options listed on the "window sticker" are present on the test vehicle.
2. Tires and wheel rims are new and the same as listed.
3. There are no dents or other interior or exterior flaws in the vehicle body.
4. The vehicle has been properly prepared and is in running condition.
5. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
6. Proper fuel filler cap is supplied on the test vehicle.
7. Spare tire, jack, lug wrench and tool kit (if applicable) is located in the vehicle cargo area.
8. The VIN (vehicle identification number) on the vehicle condition report matches the VIN on the vehicle.
9. The vehicle is equipped as specified by the COTR.

A Vehicle Condition form will be supplied to the Contractor by the COTR when the test vehicle is transferred from a new vehicle dealership or between test contracts. The upper half of the form is used to describe the vehicle as initially accepted. The lower half of the Vehicle Condition form provides space for a detailed description of the post-test condition. 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.

If the test vehicle is delivered by a government contracted transporter, the contractor should check for damage which may have occurred during transit.

GFP vehicle(s) shall not be driven by the contractor on public roadways unless authorized by the COTR.

7. GOVERNMENT FURNISHED PROPERTY (GFP)....Continued

B. NOTIFICATION OF COTR

The COTR must be notified within 24 hours after a vehicle (and/or equipment item) 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.

C. ACCEPTANCE OF PLATFORM LIFT SYSTEMS

All platform lift components shall be inventoried upon receipt and checked against the shipping documents. Any missing, broken, or incorrect parts shall be reported immediately to the COTR. A **running inventory list** shall be maintained until the complete matrix list of test samples is received.

When a lift is received at the test laboratory, the contractor is required to verify that the lift contains the following:

- A. Printed instructions in English for installing the lift, as well as a diagram or schematic depicting proper lift installation.
- B. All attachment hardware necessary for installation of the lift on the chassis of the motor vehicle for which it is intended.
- C. The warranty, owner's manual and any other information available from the manufacturer is included.

NOTE: If any of these items are missing, the COTR shall be notified.

- D. Verify that there is no damage to the lift.

If there is damage, photographs of the damaged areas shall be taken and the COTR shall be notified.

An inventory is required to be made of the number, name, and condition of all GFP received. The test samples are required to be stored in a dry, clean area specifically designated by the Laboratory Project Manager.

Each lift is required to be assigned a laboratory test group number and is required to be tagged with the make, model, and part number.

8. CALIBRATION OF TEST INSTRUMENTS

Before the Contractor initiates the vehicle safety compliance test program, a test instrumentation calibration system must be implemented and maintained in accordance with established calibration practices. The calibration system shall include the following as a minimum:

- A. Standards for calibrating the measuring and test equipment shall 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 exceeding 12 months for instruments and 12 months for the calibration standards except for static types of measuring devices such as rulers, weights, etc., which shall be calibrated at periodic intervals not to exceed two years. Records, showing the calibration traceability to the National Institute of Standards and Technology (NIST), shall be maintained for all measuring and test equipment.

Accelerometers shall be calibrated every twelve months or after a test failure or after any indication from calibration checks that there may be a problem with the accelerometer whichever occurs sooner.

- C. All measuring and test equipment and measuring standards shall 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).

8. CALIBRATION OF TEST INSTRUMENTS....Continued

6. The actual procedures and forms used to perform the calibrations.
- E. Records of calibration for all test instrumentation shall be kept by the Contractor in a manner that assures the maintenance of established calibration schedules.
- F. All such records shall be readily available for inspection when requested by the COTR. The calibration system shall need the acceptance of the COTR before vehicle safety compliance testing commences.
- G. Test equipment shall receive a system functional check out using a known test input immediately before and after the test. This check shall be recorded by the test technician(s) and submitted with the final report.
- H. The Contractor may be directed by NHTSA to evaluate its data acquisition system.

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

NOTE: In the event of a failure to meet the standard's minimum performance requirements additional calibration checks of some critically sensitive test equipment and instrumentation may be required for verification of accuracy. The necessity for the calibration will be at the COTR's discretion and shall be performed without additional cost.

9. SUGGESTED TEST EQUIPMENT

GENERAL

A. TEST PALLET

A rectangular steel plate of uniform thickness with sides that measure between 660 mm (26 inches) and 686 mm (27 inches), and weighing 45.4 kg (100 pounds) placed underneath the test load, allowing easy movement of test load. ([Figure 11](#)) (please see section 17 of this document for the List of Figures).

B. PORTABLE TEST LOAD

Rectangular steel plate(s) of uniform thickness and sides that measure between 533 mm (21 inches) and 686 mm (27 inches), weighing 45.4 kg (100 pounds). ([Figure 10](#)) (please see section 17 of this document for the List of Figures).

C. WHEELCHAIR TEST DEVICE

An unloaded power wheelchair, appropriate for a 95th percentile male and has the following dimensions, configuration and components:

- (1) a cross-braced steel frame,
- (2) a sling seat integrated in the frame,
- (3) a belt drive
- (4) detachable footrests, with the lowest point of the footrest adjustable in a range not less than 25 mm (1 inch) to 123 mm (5 inches) from the ground,
- (5) two pneumatic rear tires with a diameter not less than 495 mm (19.5 inches) and not more than 521 mm (20.5 inches) inflated to the wheelchair manufacturer's recommended tire pressure or if no recommendation exists, to the maximum pressure that appears on the sidewall of the tire,
- (6) two pneumatic front tires with a diameter not less than 190 mm (7.5 inches) and not more than 216 mm (8.5 inches) inflated to the wheelchair manufacturer's recommended tire pressure or if no recommendation exists, to the maximum pressure that appears on the sidewall of the tire,
- (7) a distance between front and rear axles not less than 457 mm (18 inches) and not more than 533 mm (21 inches),
- (8) a horizontal distance between rear axle and center of gravity not less than 114 mm (4.5 inches) and not more than 152 mm (6.0 inches),

9. SUGGESTED TEST EQUIPMENT....Continued

- (9) a vertical distance between ground and center of gravity not less than 260 mm (10.25 inches) and not more than 298 mm (11.75 inches),
- (10) a mass not less than 72.5 kg (160 lb) and not more than 86.0 kg (190 lb),
- (11) batteries with a charge not less than 75% of their rated nominal capacity (for tests that require use of the wheelchair's propulsion system)

D. CLEARANCE TEST BLOCK

A block made out of a rigid material, 16 x 16 x 100 mm (0.625 x 0.625 x 4.0 inches) with all corners having a 1.6 mm (0.0625 inches) radius to measure gaps, transitions and openings. ([Figure 4](#))

E. RIGID BOX FOR DETECTING PLATFORM OCCUPANCY

A rigid box, 152 x 152 x 305 mm (6 x 6 x 12 inches) with a weight of 22.7 kg (50 lb) to detect platform occupancy. ([Figure 7](#))

F. TEST FIXTURE

Test fixture with a mounting plate having a width, and floor-to-ground height, similar in size and configuration to a vehicle doorway compatible with the lift manufacturer's specifications. The fixture should have a surface to allow installation of the external switches using the manufacturer's hardware.

G. ILLUMINATION MEASURING DEVICE

A device to measure the illumination in lux (lumen/m²) of the platform lighting on public use lifts, 0-100 lux ±1 lux.

H. LIGHT INTENSITY MEASURING DEVICE

A device to measure the intensity in candela (cd) of the visual threshold warning beacon, and threshold area edge marking.

I. SOUND LEVEL METER

A sound level meter to measure noise level in decibels (dBA) of the audible threshold warning, 30-130 dBA range, Type 2 (+/-2 dBA).

9. SUGGESTED TEST EQUIPMENT....Continued

J. ELEVATED TEST PLATFORM FOR WHEELCHAIR TEST RETENTION DEVICE IMPACT TEST

A rectangular, level elevated platform with a guide rail for the wheelchair test device and a lift mounting plate at one end of the platform.

K. TEST SPHERES

1. A sphere, 19 mm \pm 0.2 mm in diameter, to measure gaps
2. A sphere, 13 mm \pm 0.2 mm in diameter, to measure gaps
3. A sphere, 6.5 mm \pm 0.2 mm in diameter, to measure gaps

L. UNOBSTRUCTED PLATFORM OPERATING VOLUME FIXTURE ASSEMBLY

A fixture assembly consisting of an upper and lower portion to simulate a passenger in a wheelchair. The upper portion consists of a set volume, whereas the lower portion is bound in width and height, but varies with the length of the platform. The fixture must be aligned with the geometric center of the platform. To accommodate this alignment, a centrally located tube is placed in the upper and lower portions to provide a visual verification. ([Figure 8](#))

M. INCLINOMETER

A device to determine angular orientation of a surface with a range of 0-360 $^{\circ}$ \pm 1 $^{\circ}$.

N. VELOCITY MEASURING APPARATUS

An apparatus that measures the basis for the vertical and horizontal speed (time and distance) of the platform. The range of measurement shall be 0-500 mm/s (19.6 inches/s) \pm 1 mm/s (.039 inches/s).

O. ACCELEROMETER

A bi-axial accelerometer with a range of 0-5 g \pm 0.05 g to measure horizontal and vertical acceleration of the platform, filtered with a channel frequency class (CFC) 3 filter meeting the requirements of SAE Recommended Practice J211/1, rev. Mar 95, with $F_H=3$ Hz and $F_N=5$ Hz.

EQUIPMENT FOR SLIP RESISTANCE TEST

P. DISTILLED WATER AND DEVICE FOR MEASURING QUANTITY

9. SUGGESTED TEST EQUIPMENT....Continued

Q. TEST APPARATUS, ANSI/RESNA WC/Vol. 1-1998, sec.13

(1) Fabricate a solid steel test block with a flat bottom surface, 50 mm x 200 mm and 63 mm thick. The radiused end shall be fitted with a ring or similar fastening which will allow the block to be pulled across the test surface with the force acting parallel to the test surface and at a distance 50 mm below the top surface of the block. The mass of the test block and ring with the rubber attached shall be 5 +/- 0.05 kg. ([Figure 14](#))

(2) A test rubber sheet ([Figure 14](#)), 50mm x 200 mm and 6 mm thick, shall be attached with contact adhesive to both the planar and the curved bottom surface of the test block. The rubber used for this test shall have the resilience and hardness characteristics specified in Table 1, and checked respectively according to ISO 4662 and ISO 48. It shall have a smooth surface finish. (Suitable rubber known as "Road Research Laboratory Skid Resistance Test Rubber" obtained from Rubber and Plastic Research Association or equivalent)

Table 1 – Resilience and hardness characteristics

Characteristic of test rubber	Temperature, °C				
	0	10	20	30	40
Resilience, %	43 to 49	58 to 65	66 to 73	71 to 77	74 to 79
Hardness, IRHD	55 ± 5				

R. WATERPROOF SILICON CARBIDE PAPER, GRADE P120, WEIGHT D (120 WET AND DRY)

S. FORCE GAUGE

A force gauge with a range of 25 N to 100 N (5.6 to 22.5 lb), calibrated to an accuracy of +/- 2% of the reading.

T. MACHINE TO PULL TEST BLOCK

A machine to pull the test block at a rate of 20 ± 2 mm/s. The machine and test block are rigidly linked by a device that exhibits a stiffness greater than or equal to 1x10⁵ N/m.

EQUIPMENT FOR ENVIRONMENTAL RESISTANCE TEST

U. SALT SPRAY APPARATUS

Salt spray Apparatus, ASTM B117-97 titled "Standard Practice for Operating Salt Spray (Fog) Apparatus," for testing of attachment hardware and externally mounted platform lifts or components.

9. SUGGESTED TEST EQUIPMENT....Continued

V. DETECTION OF CHROMIUM IN STEEL, COATING COMPOSITION

Method of detecting amount of chromium in steel and composition of electrodeposited coating, ASTM B456-95 entitled "Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium".

W. OPTIONAL TEST JIG FOR EXTERNALLY MOUNTED LIFTS

An optional test jig for externally mounted platform lifts or components (the test setup configuration is such that areas of the lift that would be exposed to the outside environment during actual use are not protected by the salt spray or by the test jig).

X. TEST SPHERE

A sphere, 20 mm \pm 0.2 mm in diameter, to measure corrosion spots.

10. PHOTOGRAPHIC DOCUMENTATION

DIGITAL PHOTOGRAPHS

The contractor shall take digital photographs of the test execution procedures. Photographs shall be taken in color and contain clear images. A tag, label or placard identifying the test item, NHTSA number (if applicable) and date shall appear in each photograph and must be legible. Each photograph shall be labeled as to the subject matter. The required resolution for digital photographs is a minimum of 1,600 x 1,200 pixels. Digital photographs are required to be created in color and in a JPG format. Glare or light from any illuminated or reflective surface shall be minimized while taking photographs.

The test reports shall include enough photographs to describe the testing in detailed and shall be organized in a logical succession of consecutive pictures. Photographs of all areas of the lift that may be of importance to the test shall be taken in excess and included in the final test report only if the need arises. The digital photographs shall be included in the test report as 203 mm x 254 mm or 215.9 mm x 279 mm (8 x 10 or 8½ x 11 inch) pictures (or for equipment testing -- 125 mm x 175 mm (5 x 7 inch) pictures). All photographs are required to be included in the test report in the event of a test failure. Any failure must be photographed at various angles to assure complete coverage. Upon request, the photographs shall be sent to the COTR on a CD or DVD and saved in a "read only" format to ensure that the digital photographs are the exact pictures taken during testing and have not been altered from the original condition.

REALTIME CAMERA COVERAGE

The contractor shall use a “real-time” color digital camera with at least 24 frames/second (fps) to record test sequences when specified. All “real-time” photographic coverage required by the test procedure shall be included with the final report.

The video footage shall be transferred to a compact disc (CD) or DVD as AVI or MPEG files with any standard or generally available “codec” compatible to Microsoft Windows. All video footage should be saved in a “read only” format before sending to the COTR to verify that the evidence has not been altered from its original condition. Video footage may only be saved using other types of file formats if approved by the COTR.

PHOTOGRAPHIC VIEWS

A tag, label, or placard identifying the test item make and model, NHTSA number, and compliance test date are required to appear in each photograph and be legible. As a minimum the following photographs, photocopies, or digital are required to be included in the final test report:

General Requirements

1. The lift in the condition it was received (front, rear, and both sides)
2. Certification label
3. Lift installed on test fixture or on vehicle
4. Stowed lift
5. Deployed lift
6. Vehicle floor level loading position
7. Ground level loading position
8. Vehicle owner’s manual insert
 - 8.1. Maintenance schedule
 - 8.2. Lift operating procedures including backup operations

Specific Requirements

Public Use Lifts

1. The statement “DOT-Public Use Lift” on the front cover of insert.

10. PHOTOGRAPHIC DOCUMENTATION.....Continued

2. The statement within the insert: "*DOT-Public Use Lift* verifies that this platform lift meets the "public use lift" requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb)."
3. The statement "DOT-Public Use Lift" on the front cover of the installation instructions.

Private Use Lifts

1. The dimensions that constitute the unobstructed platform operating volume for the lift.
2. The manufacturer's rated load for the lift.
3. Information on whether a wheelchair user must back onto the platform from the ground level loading position due to the absence of an inner roll stop.
4. The statement "DOT-Private Use Lift" on the front cover of the vehicle owner's manual insert
5. The statement "*DOT-Private Use Lift* verifies that this platform lift meets only the "private use lift" requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, except for buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb)."
6. Lift Installation Instructions with information identifying:
 - a. The vehicles on which the lift is designed to be installed by make, model, and year, or by specifying the design elements that would make a vehicle an appropriate host for a particular lift, and for which the platform lift manufacturer has certified compliance.
 - b. Procedures for operational checks that the vehicle manufacturer must perform to verify that the lift is fully operational.
 - c. Any informational material or labels that must be placed on or in the vehicle in order to comply with the requirements of this standard. Labels must be of a permanent nature that can withstand the elements of the outside environment.
7. The manufacturer's rated load for the lift and the statement "DOT-Private Use Lift" on the front cover of the installation instructions.

Platform Requirements

1. Inner Roll-Stop
2. Outer Barrier
3. Platform Surface
4. Bridgeplate

10. PHOTOGRAPHIC DOCUMENTATION.....Continued

5. Threshold area
6. Gap between the inner roll stop and the lift platform (w/ Test Fixture)
7. Horizontal gap over which a passenger may traverse to enter or exit the platform (w/ Test Fixture)
8. Unobstructed Volume (w/Test Fixture)
9. Opening in platform surface (w/Test Fixture)
10. Edges of the platform surface
11. Visible edge of the vehicle floor or bridging device adjacent to the platform lift
12. Designated standing area (if applicable)
13. Lift Platform Outline Markings (Public Only)
14. Lift light(s) (Public Only)
15. Flashing Red Beacon
16. Gap between the outer barrier and the lift platform (w/Test Fixture)
17. Gap between the platform sides and edge guards (w/Test Fixture)
18. Horizontal gap between the platform side and the vehicle structure (w/Test Fixture) if applicable
19. Edge guards
20. Platform Requirements Test failure(s)

Environmental Resistance Test

1. Test apparatus
2. Lift attachment hardware
3. "Upper" attachment hardware
4. Attachment hardware ferrous corrosion (w/ Test Fixture)

10. PHOTOGRAPHIC DOCUMENTATION.....Continued

5. Assembled externally mounted lift and all associated attachment hardware.
6. Test device location on the threshold area.
7. Environmental Resistance Test failure(s)

Wheelchair retention device impact test

1. Position of the forward most element of the test device on the platform before forward wheelchair retention impact test
2. Position of the test device after forward wheelchair retention impact test
3. Position of the rearward most element of the test device on the platform before rearward wheelchair retention impact test
4. Position of the test device after rearward wheelchair retention impact test
5. Digital video of Wheelchair retention device impact test
6. Wheelchair retention device impact test failure(s)

Inner roll stop test

1. Pre-test footrest position
2. Position of the forward most element of the test device on the platform before forward inner roll stop impact test
3. Position of the test device after inner roll stop impact test
4. Digital video of Inner roll stop test
5. Inner roll stop test failure(s)

Static load test I—working load

1. Lift system control (fixed and/or pendant) and control location (Public Only)
2. Control panel face(s) including noise level measurement device
3. Lift operating instructions
4. Digital video of Static load test I—working load

10. PHOTOGRAPHIC DOCUMENTATION....Continued

5. Static load test I failure(s)

Fatigue endurance test

1. Test Load on platform
2. Lift cycle counter (if visible)
3. Fatigue endurance test failure(s)

Static load test II—proof load

1. Test Load on platform
2. Digital video of Static load test II—proof load
3. Static load test II failure(s)

Handrail test

1. Handrails
2. Digital video of handrail position with raise/lower operation of lift
3. Area location and force application position of first slack take-up load
4. Area location and force application position of first load
5. Digital video of first force application
6. Displacement of handrail (first force application)
7. Clearance to vehicle (if applicable)
8. Permanent deformation (if applicable)
9. Area location and force application position of second slack take-up load
10. Area location and force application position of second load
11. Digital video of second force application
12. Displacement of handrail (second force application)

10. PHOTOGRAPHIC DOCUMENTATION....Continued

13. Evidence of cracking, separation, or fractures (if applicable)

14. Handrail test failure(s)

Wheelchair retention device overload test

1. Platform above ground level loading position
2. Wheelchair retention device
3. Force application
4. Evidence of cracking, separation, or fractures (if applicable)
5. Digital video of Wheelchair retention device overload test

Static load test III—ultimate load

1. Platform at the vehicle floor loading position
2. Load application
3. Evidence of cracking, separation, or fractures (if applicable)
4. Digital video of Static load test III

11. DEFINITIONS**BRIDGING DEVICE**

The portion of a platform lift that is a transitional surface between the platform surface and the surface of the vehicle floor within the platform threshold area.

CYCLE

Deploying a platform lift from a stowed position, lowering the lift to the ground level loading position, raising the lift to the vehicle floor loading position, and stowing the lift, including operation of any wheelchair retention device, bridging device, and inner roll stop.

DEPLOY

To move a platform from a stowed position to an extended position or, one of the two loading positions.

11. DEFINITIONS....Continued

To move a wheelchair retention device or inner roll stop to a fully functional position intended to prevent a passenger from disembarking the platform or being pinched between the platform and vehicle.

EXTERNALLY MOUNTED PLATFORM LIFTS

Platform lifts and their components stowed outside the vehicle's occupant compartment and outside other compartments that provide protection from the elements.

FLOOR REFERENCE PLANE

The plane perpendicular to the longitudinal vehicle reference plane for platform lifts that deploy from the side of the vehicle or perpendicular to the transverse vehicle reference plane for platform lifts that deploy from the rear of the vehicle, and tangent to the outermost edge of the vehicle floor surface adjacent to the lift platform. ([Figure 1](#))

GAP

A discontinuity in a plane surface, or between two adjacent surfaces.

GRASPABLE PORTION OF A HANDRAIL

Any portion of a handrail that falls between 30 and 38 inches from the lift platform, and intersects two planes that are perpendicular to the platform reference plane and to the direction of travel of a wheelchair on the lift when entering or exiting the platform. ([Figure 12](#))

INNER ROLL-STOP

A device that is located at the edge of the platform that a passenger or mobility aid must traverse when entering and exiting the platform from the vehicle floor loading position, designed to retain mobility aids on the platform surface during the range of passenger operation.

INTERNALLY MOUNTED PLATFORM LIFTS

Platform lifts and their components stowed in the vehicle's occupant compartment or in other vehicle compartments that provide protection from the elements.

LIFT REFERENCE PLANE

The plane that is defined by two orthogonal axes passing through the geometric center of the platform surface of a platform lift. One axis is perpendicular to the platform reference plane and the other is parallel to the direction of wheelchair travel during loading of the lift. ([Figure 1](#))

11. DEFINITIONS....Continued

LOADING POSITION

A position at which a passenger can either embark or disembark the lift. The two loading positions for the purpose of this test procedure are at vehicle floor and ground level.

LONGITUDINAL VEHICLE REFERENCE PLANE

The plane that is perpendicular to the floor reference plane and contains the longitudinal axis of the vehicle when the vehicle body is level and moves along with the vehicle body in response to the loading of the vehicle suspension. ([Figure 1](#))

OUTER BARRIER

A wheelchair retention device that is located on the edge of the platform, is traversed during ground level loading and unloading, and retains wheelchairs on the platform surface during the range of passenger operation.

PLATFORM

That portion of a platform lift on which the mobility aid or passenger rests while being raised or lowered.

PLATFORM LIFT

A level change device, including any integration of existing vehicle components used to assist persons with limited mobility in entering or exiting a vehicle.

PLATFORM REFERENCE PLANE

A plane tangent to the platform surface at its geometric center. ([Figure 1](#))

PLATFORM SURFACE

The passenger-carrying surface of the lift platform.

PLATFORM THRESHOLD AREA

The rectangular area of the vehicle floor defined by moving a line that lies on the portion of the edge of the vehicle floor directly adjacent to the platform, through a distance of 457 mm (18 inches) across the vehicle floor in a direction perpendicular to the edge. Any portion of a bridging device that lies on this area must be considered part of that area. ([Figure 15](#))

11. DEFINITIONS....Continued

PRIVATE USE LIFT

A platform lift certified to the requirements for private use lifts and requirements in this standard for all lifts.

PUBLIC USE LIFT

A platform lift certified to the requirements for public use lifts and requirements in this standard for all lifts.

RANGE OF PASSENGER OPERATION

The portion of the lift cycle during which the platform is at or between the vehicle floor and ground level loading positions excluding any stow and deploy operations.

STANDARD TEST LOAD

A static load or mass centered on the test pallet such that the total combined mass for public-use lifts shall be 272 kg (600 lb), and the total combined mass for private-use lifts shall be the lift manufacturer's stated rated load or 181 kg (400 lb), whichever is greater.

STOW

A platform's movement from a position within the range of passenger operation to the position maintained during normal vehicle travel

The movement of a wheelchair retention device, bridging device, or inner-roll stop from a fully functional position to a position maintained during normal vehicle travel.

TEST PALLET

A platform on which required test loads are placed for handling and moving. ([Figure 11](#))

TRANSVERSE VEHICLE REFERENCE PLANE

The plane that is perpendicular to the floor reference plane and contains the transverse axis of the vehicle when the vehicle body is level and that moves along with the vehicle body in response to the loading of the vehicle suspension. ([Figure 1](#))

WHEELCHAIR RETENTION DEVICE

A device designed to prevent wheelchairs from leaving the edge of the platform used for ground level loading and unloading during the range of passenger operation.

12. PRETEST REQUIREMENTS

- A. Review all pretest, safety standard performance, and test instrumentation requirements relating to this compliance test. Personnel supervising and/or performing the compliance test shall be thoroughly familiar with all of the requirements.
- B. Review contents of Vehicle owner's manual insert, Lift Installation Instructions, Lift Mounting Kit Instructions, and Operating Instructions provided by the lift manufacturer.
- C. Verify COTR approval of contractor's detailed in-house test procedure.
- D. Verify the calibration status of test equipment.

13. COMPLIANCE TEST EXECUTION

13.1. GENERAL REQUIREMENTS

- 1. Secure the lift in a suitable test fixture, or verify adequate installation within a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
- 2. Photograph certification label and note if the lift is Public or Private in [Data Sheet 1: Platform Lift Type](#).
- 3. Verify wording on the certification label is consistent with requirements in [Data Sheet 1: Platform Lift Type](#).
- 4. If the lift is installed upon a vehicle, note the GVWR and type of the vehicle and record in [Data Sheet 1: Platform Lift Type](#).
- 5. Photograph the lift in the following positions: Stowed Position, Vehicle Level Loading Position, and Ground Level Loading Position.
- 6. Verify and photograph, photocopy, or digitally scan the specific portions of the vehicle owner's manual insert that provide specific information about the platform lift and include as part of the compliance test report. This insert must be written in the English language and must include:
 - a. A maintenance schedule that includes maintenance requirements that have, at a minimum, some dependency on the number of cycles on the operations on the lift operations counter. Record in [Data Sheet 1: Vehicle Owner's Manual](#).
 - b. Instructions regarding the platform lift operating procedures, including backup operations. Record in [Data Sheet 1: Vehicle Owner's Manual](#).
 - c. *Public Use Lifts*

13. COMPLIANCE TEST EXECUTION....Continued

- i. The statement “DOT-Public Use Lift” on the front cover of the vehicle owner’s manual insert. Record in [Data Sheet 1: Public Use Lift Owner’s Manual.](#)
 - ii. The statement “*DOT-Public Use Lift* verifies that this platform lift meets the “public use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb).” Record in [Data Sheet 1: Public Use Lift Owner’s Manual.](#)
 - d. *Private Use Lifts*
 - i. The dimensions that constitute the unobstructed platform operating volume for the lift. Record in [Data Sheet 1: Private Use Lift Owner’s Manual.](#)
 - ii. The manufacturer’s rated load for the lift. Record in [Data Sheet 1: Private Use Lift Owner’s Manual.](#)
 - iii. Information on whether a wheelchair user must back onto the platform from the ground level loading position due to the absence of an inner roll stop. Record in [Data Sheet 1: Private Use Lift Owner’s Manual.](#)
 - iv. The statement “DOT-Private Use Lift” on the front cover of the vehicle owner’s manual insert. Record in [Data Sheet 1: Private Use Lift Owner’s Manual.](#)
 - v. The statement “*DOT-Private Use Lift* verifies that this platform lift meets only the “private use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, except for buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb).” Record in [Data Sheet 1: Private Use Lift Owner’s Manual.](#)
7. Verify and photograph, photocopy, or digitally scan the specific portions of the Lift Installation instructions that provide specific information about the platform lift and include as part of the compliance test report. This insert must be written in the English language and must include:
 - a. The vehicles on which the lift is designed to be installed by make, model, and year, or by specifying the design elements that would make a vehicle an appropriate host for a particular lift, and for which the platform lift manufacturer has certified compliance. Record in [Data Sheet 1: Installation Instructions.](#)
 - b. Procedures for operational checks that the vehicle manufacturer must perform to verify that the lift is fully operational. Such checks include, but are not limited to, platform lighting, the threshold-warning signal, and interlocks, including those

13. COMPLIANCE TEST EXECUTION....Continued

that interface with vehicle systems. Record in [Data Sheet 1: Installation Instructions.](#)

- c. Any informational material or labels that must be placed on or in the vehicle in order to comply with the requirements of this standard. Labels must be of a permanent nature that can withstand the elements of the outside environment. Record in [Data Sheet 1: Installation Instructions.](#)
- d. *Public Use Lifts*
 - i. The statement "DOT-Public Use Lift" on the front cover of the installation instructions. Record in [Data Sheet 1: Public Use Lift Installation Instructions.](#)
 - ii. The statement "Public use vehicle manufacturers are responsible for complying with the lighting requirements in Federal Motor Vehicle Safety Standard No. 404, Platform Lift installations in Motor Vehicles (CFR 571.404)." Record in [Data Sheet 1: Public Use Lift Installation Instructions.](#)
- e. *Private Use Lifts*
 - i. The statement "DOT-Private Use Lift" on the front cover of the installation instructions. Record in [Data Sheet 1: Private Use Lift Installation Instructions.](#)
 - ii. The manufacturer's rated load for the lift on the front cover of the installation instructions. Record in [Data Sheet 1: Private Use Lift Installation Instructions.](#)

NOTE: Buses, school buses, and MPVs with a GVWR greater than 4,536 kg (10,000 lb.) must be fitted with a public use lift, certified by the manufacturer as meeting the requirements for public use lifts. Motor Homes may be fitted with either a public or private certified lift.

13.2. PLATFORM REQUIREMENTS

1. Secure the lift in a suitable test fixture, or verify adequate installation within a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Unobstructed Platform Operating Volume.
 - a. Move the platform to the ground level position.
 - b. Mark the geometric center of the platform, and note in [Data Sheet 2: Geometric Center Location.](#)

13. COMPLIANCE TEST EXECUTION....Continued

- c. Photograph the geometric center location.
 - d. *Public Use Lifts*
 - i. Center the Upper and Lower parts of the Unobstructed Volume test fixture ([Figure 8](#)) onto the platform.
 - ii. Verify the Unobstructed Volume test fixture is contained within the lift platform. Record findings in [Data Sheet 2: Public Use Lift Unobstructed Platform Operating Volume](#). If the Unobstructed Volume test fixture cannot be contained within the lift platform, a test failure has occurred. Photograph failure.
 - iii. Raise the lift to the vehicle loading level. Verify the Unobstructed Volume test fixture does not contact any other lift component during operation. Record findings in [Data Sheet 2: Public Use Lift Unobstructed Platform Operating Volume](#). Photograph the test fixture on the platform.
 - iv. Remove Unobstructed Volume test fixture.
 - e. *Private Use Lifts*
 - i. The platform operating volume is specified by the lift manufacturer and identified in the lift insert to the vehicle owner's manual. Record findings in [Data Sheet 2: Private Use Lift Unobstructed Platform Operating Volume](#).
3. Platform Surface Protrusions.
- a. *Public Use Lifts*
 - i. Move the lift to the ground level loading position.
 - ii. Verify the platform has no protrusions that rise more than 6.5 mm (0.25 inches) above the platform surface.
 - iii. Measure protrusions perpendicular to the platform surface by a device with its base centered between 50 – 100 mm (2 – 4 inches) from the protrusion.
 - iv. Any cross-sectional dimension of the base of the protrusion measurement device must be greater than or equal to 25 mm (1 inch) and less than or equal to 50 mm (2 inches).
 - v. Record measurements in [Data Sheet 2: Public Use Lift Platform Protrusion Height](#). If a protrusion, except as required for deployment or the wheelchair retention device and inner roll stop, rises greater than 6.5 mm (0.25 inches) above the platform surface, a test failure has occurred.
 - b. *Private Use Lifts*
 - i. Move the lift to the ground level loading position.
 - ii. Verify the platform has no protrusions that rise more than 13 mm (0.5 inches) above the platform surface.
 - iii. If protrusions are suspected of not meeting requirements, measure protrusions perpendicular to the platform surface by a device with its base

13. COMPLIANCE TEST EXECUTION....Continued

centered between 50 – 100 mm (2 – 4 inches) from the protrusion. Record measurements in [Data Sheet 2: Private Use Lift Platform Protrusion Height and Slope](#).

- iv. Any cross-sectional dimension of the base of the protrusion measurement device must be greater than or equal to 25 mm (1 inch) and less than or equal to 50 mm (2 inches).
- v. If a protrusion, except as required for deployment of the wheelchair retention device and inner roll stop, rises greater than 13 mm (0.5 inches) above the platform surface, a test failure has occurred.
- vi. All portions of the sides of a protrusion that are between 6.5 mm (0.25 inches) and 13 mm (0.5 inches) above the platform must have a slope not greater than 1:2, measured with respect to the platform surface at the location of the protrusion. If the slope measurement is exceeded, a test failure has occurred. Record measurements in [Data Sheet 2: Private Use Lift Platform Protrusion Height and Slope](#).

4. Gaps, Transitions, and Openings.

a. *Ground Level Loading Position*

- i. Move the platform to the ground level loading position.

NOTE: Measurements are made perpendicular to the ground.

- ii. Measure the vertical surface transition, perpendicular to the ground, of any surface a passenger may traverse to enter or exit the platform from the ground. Record the measurement in [Data Sheet 2: Ground Level Loading Position](#). The measurement may not exceed 6.5 mm (0.25 inches), or a test failure has occurred.
- iii. Photograph any areas showing excessive vertical transitions.

NOTE: The 6.5 mm (0.25 inches) requirement does not apply to the vertical transition from the ground to the outer barrier.

- iv. Measure the slope of any surface a passenger may traverse to enter or exit the platform between the rise of 6.5 mm (0.25 inches) and 13 mm (0.5 inches). Take these measurements perpendicular to ground. Record the measurement in [Data Sheet 2: Ground Level Loading Position](#). The measurement may not exceed 1:2, or a test failure has occurred.
- v. Measure the slope of any surface a passenger may traverse to enter or exit the platform between the rise of 13 mm (0.5 inches) and 75 mm (3 inches). Take these measurements perpendicular to ground. Record the measurements in [Data Sheet 2: Ground Level Loading Position](#). The measurement may not exceed 1:8, or a test failure has occurred.

13. COMPLIANCE TEST EXECUTION....Continued

- vi. The rise of any sloped surface may not be greater than 75 mm (3 inches), or a test failure has occurred.
 - vii. Repeat steps 4.a.ii through 4.a.v with a standard load centered on the platform.
- b. *Verifying Ground Level Gaps and Openings*
- i. At ground level, verify any gap between the inner roll stop and the lift platform prevents passage of the clearance test block ([Figure 4](#)) when its long axis is held perpendicular to the platform reference plane ([Figure 1](#)). Photograph and record this verification in [Data Sheet 2: Verifying Ground Level Gaps and Openings](#).
 - ii. Verify any horizontal gap over which a passenger may traverse to enter or exit the platform prevents passage of a 13 mm (0.5 inch) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Ground Level Gaps and Openings](#).
 - iii. Verify that any opening in that portion of the platform surface that coincides with the unobstructed platform operating volume prevents passage of a 19 mm (0.75 inch) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Ground Level Gaps and Openings](#).
 - iv. Verify any gap between the platform sides and edge guards that move with the platform prevents passage of a 13 mm (0.5 inches) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Ground Level Gaps and Openings](#).
 - v. **If the lift is installed upon a vehicle, and structures attached to the vehicle are used as edge guards**, verify the horizontal gap between the platform side and the vehicle structure prevents passage of a 6.5 mm (0.25 inches) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Ground Level Gaps and Openings](#).
 - vi. Repeat steps 4.b.i through 4.b.v with a standard load centered on the platform.
- c. *Vehicle Level Loading Position*
- i. Move the platform to the vehicle level loading position.

NOTE: Measurements are made perpendicular to the floor of the test fixture or vehicle.

- ii. Measure the vertical surface transition, perpendicular to the threshold area, of any surface a passenger may traverse to enter or exit the platform from the vehicle. Record the measurement in [Data Sheet 2: Vehicle Level Loading Position](#). The measurement may not exceed 6.5 mm (0.25 inches), or a test failure has occurred.
- iii. Photograph any areas showing excessive vertical transitions.

13. COMPLIANCE TEST EXECUTION....Continued

NOTE: The 6.5 mm (0.25 inches) requirement does not apply to the vertical transition from the vehicle floor to the threshold area.

- iv. Measure the slope of any surface a passenger may traverse to enter or exit the platform between the rise of 6.5 mm (0.25 inches) and 13 mm (0.5 inches). Take these measurements perpendicular to the threshold area. Record the measurement in [Data Sheet 2: Vehicle Level Loading Position](#). The measurement may not exceed 1:2, or a test failure has occurred.
 - v. Measure the slope of any surface a passenger may traverse to enter or exit the platform between the rise of 13 mm (0.5 inches) and 75 mm (3 inches). Take these measurements perpendicular to the threshold area. Record the measurement in [Data Sheet 2: Vehicle Level Loading Position](#). The measurement may not exceed 1:8, or a test failure has occurred. The rise of any sloped surface may not be greater than 75 mm (3 inches), or a test failure has occurred.
 - vi. Repeat steps 4.c.ii through 4.c.v with a standard load centered on the platform.
- d. *Verifying Vehicle Level Gaps and Openings*
- i. At vehicle level, verify any gap between the outer barrier and the lift platform prevents passage of the clearance test block ([Figure 4](#)) when its long axis is held perpendicular to the platform reference plane ([Figure 1](#)). Photograph and record this verification in [Data Sheet 2: Verifying Vehicle Level Gaps and Openings](#).
 - ii. Verify any horizontal gap over which a passenger may traverse to enter or exit the platform prevents passage of a 13 mm (0.5 inch) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Vehicle Level Gaps and Openings](#).
 - iii. Verify that any opening in that portion of the platform surface that coincides with the unobstructed platform operating volume prevents passage of a 19 mm (0.75 inch) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Vehicle Level Gaps and Openings](#).
 - iv. Verify any gap between the platform sides and edge guards that move with the platform prevents passage of a 13 mm (0.5 inches) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Vehicle Level Gaps and Openings](#).
 - v. **If the lift is installed upon a vehicle, and structures attached to the vehicle are used as edge guards**, verify the horizontal gap between the platform side and the vehicle structure prevents passage of a 6.5 mm (0.25 inches) diameter sphere. Photograph and record this verification in [Data Sheet 2: Verifying Vehicle Level Gaps and Openings](#).
 - vi. Repeat steps 4.d.i through 4.d.v with a standard load centered on the platform.

13. COMPLIANCE TEST EXECUTION....Continued

5. Platform Deflections

- a. Deploy the lift to the vehicle level loading position.
- b. Zero reference a calibrated inclinometer using the ground. Place the inclinometer at the platform geometric center. Record the angle of the unloaded platform in [Data Sheet 2: Platform Deflection with and without Load.](#) Remove the inclinometer.
- c. Center a standard load, including the test pallet, on the platform surface. (Hint: Disengage the outer barrier to allow for easier access to the platform) Record the angle of the loaded platform in [Data Sheet 2: Platform Deflection with and without Load.](#) Remove the inclinometer.
- d. Photograph the standard load on the platform.
- e. Place an inclinometer about its longitudinal centerline on the vehicle floor or test fixture, coincident with the platform centerline. Record the angle of vehicle floor in [Data Sheet 2: Platform Deflection with and without Load.](#) Remove the inclinometer.
- f. Compare the angle of loaded platform with that of the angle of vehicle floor. Record the difference in [Data Sheet 2: Platform Deflection with and without Load.](#) If the angles differ by more than 4.8°, a test failure occurred.
- g. Compare the angle of the loaded platform with that of the unloaded platform. Record the difference in [Data Sheet 2: Platform Deflection with and without Load.](#) If the angles differ by more than 3°, a test failure occurred.
- h. Remove the standard load, including the test pallet and return the lift to the ground level loading position.

6. Edge Guards

- a. Move the platform lift from ground level loading position to the vehicle level loading position.
- b. Verify the edge guards are continuous and parallel with the direction of wheelchair movement during loading and unloading. Photograph and record in [Data Sheet 2: Edge Guards.](#)
- c. Measure the distance between the end of the platform, not including portions of an outer roll stop, and the closest parallel face of an edge guard. Record the

13. COMPLIANCE TEST EXECUTION....Continued

measurement in [Data Sheet 2: Edge Guards](#). If the distance is greater than 75 mm (3 inches), then a test failure has occurred.

- d. Measure the height of edge guards (at various locations) that move with the platform, perpendicular from the platform surface. Record this measurement in [Data Sheet 2: Edge Guards](#). If the edge guard height is less than 38 mm (1.5 inches) a test failure has occurred.
- e. Lower the platform until the edge guards start to release, if so equipped. Measure the vertical distance from the ground to the platform surface. Record this measurement in [Data Sheet 2: Edge Guards](#). If the distance is greater than 75 mm (3 inches), then a test failure has occurred.

7. Edge Guards – Alternative Test

NOTE: Only test edge guards using alternative test method if directed by the COTR. Also, the alternative edge guard test shall be video taped.

- a. Move the platform to the ground level loading position.
- b. Fully charge the propulsion battery of the test device, and verify a fully functional drive system.
- c. Position the lift platform surface 90 mm \pm 10 mm (3.5 in \pm 0.4 inches) above the ground level loading position. Note the height in [Data Sheet 2: Edge Guards – Alternative Test](#).
- d. Remove the foot rests from the wheelchair test device.
- e. Center the wheelchair on the platform surface with its forward direction of travel inboard toward the vehicle, and its position on the platform as far rearward as the wheelchair retention device or outer barrier will allow it to be placed.
- f. Activate the test device controller such that, if the test device were unloaded and unrestrained on a flat, level surface, it would achieve a maximum forward speed of not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph).
- g. Attempt to steer the test device off of the platform using a side-to-side and then a corner-to-corner motion.
- h. If the front wheels of the test device pass over the edge guards of the platform, a failure has occurred. Note and photograph any test failure in [Data Sheet 2:](#)

13. COMPLIANCE TEST EXECUTION....Continued

- i. [Edge Guards – Alternative Test](#). Digitally video record the event, and include with the compliance test report.
 - j. Position the platform 38 +/- 10 mm (1.5 +/- 0.4 inches) below the vehicle floor level loading position.
 - k. Reposition the test device on the platform surface with its plane of symmetry coincident with the lift reference plane within +/- 10 mm (+/- 0.4 inches), its forward direction of travel outboard away from the vehicle, and its position on the platform as far rearward as the wheelchair inner rollstop or vehicle body will allow it to be placed.
 - l. Activate the test device controller such that, if the test device were unloaded and unrestrained on a flat, level surface, it would achieve a maximum forward speed of not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph).
 - m. Attempt to steer the test device off of the platform using a side-to-side and then a corner-to-corner motion.
 - n. If the front wheels of the test device pass over the edge guards of the platform, a failure has occurred. Note and photograph any test failure in [Data Sheet 2: Edge Guards – Alternative Test](#).
 - o. Digitally video record the event, and include with the compliance test report.
8. Platform Markings on Public Use Lifts

- a. Using an illumination measuring device, verify that all edges of the platform surface, the visible edge of the vehicle floor or bridging device adjacent to the platform lift, and any designated standing area on the lift have outlines and are of at least 25 mm (1 inches). Document in [Data Sheet 2: Public Use Lift Platform Markings](#).
- b. Verify that all edges of the platform surface, the visible edge of the vehicle floor or bridging device adjacent to the platform lift, and any designated standing area on the lift have a color that contrasts with its background by 60 percent determined according to the following equation:

$$\text{Contrast} = 100 \times [(L1 - L2)/L1]$$

where: L1 = luminance of the lighter color or shade

L2 = luminance of the darker color or shade

13. COMPLIANCE TEST EXECUTION....Continued

- c. Document L1, L2 and contrast in [Data Sheet 2: Public Use Lift Platform Markings.](#)
- d. Calculate the Light Contrast and document in [Data Sheet 2: Public Use Lift Platform Markings.](#)
- e. Photograph all edges of the platform surface, the visible edge of the vehicle floor or bridging device adjacent to the platform lift, and any designated standing area.
- f. *For Public Use Lifts with Lighting Equipment Installed Only*
 - i. Move the lift platform to the vehicle floor level.
 - ii. Set up illumination measuring equipment.
 - iii. Activate the lift light(s).
 - iv. Measure the luminance at the points illustrated in [Figure 16.](#) Record the luminance in [Data Sheet 2: Public Use Lift Platform Markings – Lighting Equipment.](#) If the lift has a light or set of lights that provide less than 22 lm/m^2 or 22 Lux (2 lm/ft^2 or 2 foot-candles), measured at the indicated points, a test failure has occurred.
 - v. Move the lift platform to the ground level loading position.
 - vi. Measure the luminance at the points illustrated in [Figure 16.](#) Record the luminance in [Data Sheet 2: Public Use Lift Platform Marking – Lighting Equipments.](#) If the lift has a light or set of lights that provide less than 11 lm/m^2 or 11 Lux (1 lm/ft^2 or 1 foot-candles), measured at the indicated points, a test failure has occurred.

NOTE: Points 7-9 are measured from the edge of the lift extents. (i.e. if the lift is equipped with an outer roll stop that doubles as a ramp transition, the measurement is taken 5 cm from the outermost edge of the ramp transition.)

13. COMPLIANCE TEST EXECUTION....Continued

13.3. INTERLOCK TEST

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. *For Lifts Installed upon a Vehicle Only*
 - a. Check wheels of vehicle, or provide adequate restraint such that the vehicle will be immobile regardless of transmission, braking, or acceleration activity.
 - b. Start the engine of the vehicle.
 - c. Set the parking brake or service brakes by means other than the operator depressing the service brake pedal, and move the shift selector to any forward or reverse position.
 - d. Move the lift "Power" control to the "On" state.
 - e. Attempt to deploy the lift using the lift control. If the lift deploys, a test failure has occurred. Note failure in [Data Sheet 3: Lifts Installed upon a Vehicle](#).
 - f. Set the transmission to "Park" or "Neutral" and deploy the lift platform to the vehicle loading position.
 - g. Release the brake and attempt to move the shift selector to any forward or reverse position. If the vehicle moves, or is capable of moving if unrestrained, a test failure has occurred. Note failure in [Data Sheet 3: Lifts Installed upon a Vehicle](#).
 - h. Set the parking brake or service brakes by means other than the operator depressing the service brake pedal, and move the shift selector to the "Park" or "Neutral" Position to activate the lift.
 - i. Stop the engine of the vehicle and remove the key.
 - j. Continue to Step 3.

NOTE: For platform lifts designed to be occupied while stowed proceed to Step 3.g

3. Inner Roll Stop Test

- a. Maneuver the platform to the vehicle floor level loading position.

13. COMPLIANCE TEST EXECUTION....Continued

- b. Place the Rigid Box for Detecting Platform Occupancy ([Figure 7](#)) on its narrowest side on the platform geometric center.
- c. Attempt to stow the lift using the powered lift controls. If the lift stows, a test failure has occurred. Record in Note in [Data Sheet 3: Inner Roll Stop](#).
- d. Place the Rigid Box in different locations on any portion of the lift platform that coincides with the unobstructed platform operating volume. Note if different placement locations of the Rigid Box have different effects in [Data Sheet 3: Inner Roll Stop](#).
- e. Photograph the Rigid Box on the platform.
- f. Remove Rigid Box for Detecting Platform Occupancy from the platform and maneuver the platform to the vehicle floor level loading position.
- g. With the lift at vehicle level, position the wheelchair on the platform surface with the rear wheels facing away from the vehicle.
- h. On the side of the platform, mark a reference point to which measurements will be taken.
- i. Using the lift control, move the platform down until the inner roll stop starts to deploy.
- j. Stop the lift and note that location from ground to the reference point. Record in [Data Sheet 3: Inner Roll Stop](#). Photograph this location.
- k. Reposition the platform at the vehicle floor level loading position.
- l. Place one front wheel of the wheelchair test device on the inner roll stop or along the innermost edge of the platform if the inner roll stop is not accessible.
- m. Photograph the wheel(s) placement on the inner roll stop.

NOTE: If the platform is too small to maneuver one front wheel on the inner roll stop, two front wheels may be placed on the inner roll stop. The wheelchair test device parking brakes can also be used to stabilize the wheelchair.

- n. Using the lift control, move the platform down until the inner roll stop starts to deploy.

13. COMPLIANCE TEST EXECUTION....Continued

- o. Determine whether the platform has stopped and whether the inner roll stop has deployed, and note that location in reference to a designated marked point on the platform. Record in [Data Sheet 3: Inner Roll Stop](#).
 - p. If the front wheel has risen, measure the distance that it is raised above the platform surface. Record this data in [Data Sheet 3: Inner Roll Stop](#). If the distance is greater than 13 mm (0.5 inches), a test failure has occurred.
 - q. Photograph the post-test position of the wheelchair and front wheel.
 - r. Verify the platform does not move up or down if the inner roll stop is not fully deployed. If the platform continues to move without the inner roll stop being fully deployed, a test failure has occurred. Note the failure in [Data Sheet 3: Inner Roll Stop](#).
4. Outer Barrier Interlocks
- a. Maneuver the lift platform to the ground level loading position.
 - b. Place the unloaded wheelchair on the platform surface with the rear wheels closest to the vehicle or test fixture.
 - c. Using the lift control, move the lift up until the outer barrier starts to deploy.
 - d. Photograph the platform and outer barrier at this position.
 - e. Stop the platform and measure the vertical distance between the ground and the upper platform surface and record in [Data Sheet 3: Outer Barrier Interlocks](#). If the vertical distance is greater than 75 mm (3 inches), a test failure has occurred.
 - f. Maneuver the lift platform to the ground level loading position.
 - g. Place the wheelchair test device fully on the platform.
 - h. Measure the distance at which the outer barrier is fully deployed in [Data Sheet 3: Outer Barrier Interlocks](#).
 - i. Maneuver the lift platform to the ground level loading position.
 - j. Place one front wheel of the wheelchair test device on any portion of the outer barrier.
 - k. Photograph the wheel(s) placement on the outer barrier

13. COMPLIANCE TEST EXECUTION....Continued

NOTE: If the platform is too small to maneuver one front wheel on the outer barrier, two front wheels may be placed on the barrier. The wheelchair test device parking brakes can also be used to stabilize the wheelchair.

- I. Using the lift control, move the platform up until it stops.
- m. Measure the vertical distance from the ground to the bottom of the wheelchair test device wheel(s), and record in [Data Sheet 3: Outer Barrier Interlocks](#). If the wheel has movement greater than 13 mm (0.5 inches), a test failure has occurred.

13.4. SLIP RESISTANCE TEST

1. Mark (tape off) a 450 mm x 100 mm (17.5 inches x 3.94 inches) section of the platform.
2. Thoroughly clean the section with household glass cleaner (ammonia hydroxide solution).

NOTE: No solvents or other cleaning materials are to be used.

3. Prepare the test block ([Figure 14](#)) rubber by lightly rubbing the test surface with waterproof silicon carbide paper, grade P120, weight "D" (120 wet and dry).
4. Wipe the test rubber surface clean with a dry cloth or brush. Make certain there is no lint or residue left from the cloth or brush.
5. Connect the rubber test block to a force gauge.
6. Verify that the force gauge is calibrated, and force application machine is calibrated and operational.

NOTE: The pulling force is measured, at a frequency of at least 10 Hz, by a force gauge that has been calibrated to an accuracy of $\pm 2\%$ the reading in the range of 25 N to 100 N.

Suitable types of force gauges include springs, dial strain gauges and hydraulic gauges.

7. Connect the force gauge to a data system that collects the force at 1,000 Hz. Set the data system to record for 30 seconds.
8. Rigidly attach the other end of the test block to a winch.

NOTE: The machine and test block are rigidly linked by a device that exhibits stiffness greater than or equal to 1×10^5 N/m.

13. COMPLIANCE TEST EXECUTION....Continued

9. On the cleaned section, mark a 12" (305mm) long area.
10. Measure out 13.5 ml (0.45 oz) of distilled water and evenly spray on the cleaned section of the platform.
11. Begin the test within 30 seconds of completion the wetting process.
12. Pull the test block by the winch at a rate of 20 ± 2 mm/s, for a minimum of 13 seconds.
13. Record the time it takes the test block to be pulled over the 12" (305mm) area in [Data Sheet 4: Platform Slip Resistance](#).
14. Record the pulling force during the test in [Data Sheet 4: Platform Slip Resistance](#).
15. Export the data to Excel and select the last 10 seconds of data (which was recorded at 1,000 Hz). Average the Force over the 10 seconds.
16. Record the average pulling force as $F_1 - F_n$ in [Data Sheet 4: Platform Slip Resistance](#) for each trial, where n is the number of trials.
17. Repeat steps 10 - 16, five (5) times on any one area of the platform surface, in a single direction. Additional test repetitions may be necessary to obtain a valid pulling force.
18. Photograph the slip resistance set-up and the area of the platform surface tested.
19. Set up instrumentation to record force load measurement.
20. Hang the test block and record it in [Data Sheet 4: Platform Slip Resistance](#) as F_b .
21. Calculate the platform surface coefficient of friction, μ_p , from the following equation:

$$\mu_p = \frac{F_1 + F_2 + F_3 + \dots + F_n}{n \times F_b}$$

22. Record calculation in [Data Sheet 4: Coefficient of Friction Calculation](#).
23. The coefficient of friction in any direction of any part of the wet platform surface may not be less than 0.65. If the coefficient of friction is less than 0.65, a test failure has occurred. Note the results in [Data Sheet 4: Coefficient of Friction Calculation](#).

13. COMPLIANCE TEST EXECUTION....Continued

13.5. ENVIRONMENTAL RESISTANCE TEST

1. Secure the lift in a suitable test fixture, or verify adequate installation within a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Is the lift designed to be completely within the occupant compartment when stowed? Document in [Data Sheet 5: Environmental Resistance](#).
3. Is the lift attachment hardware protected against corrosion by an electrodeposited coating of nickel, or copper and nickel with at least a service condition number of SC1, in accordance with ASTM B456-95, and is not racked for electroplating in locations subjected to maximum stress? Document in [Data Sheet 5: Environmental Resistance](#).
4. *For Lift Attachment Hardware Only*
 - a. ASTM Procedure B117-73 titled "Standard Method of Salt Spray (Fog) Testing" will be followed using the basic steps below:
 - i. Prepare a salt solution by dissolving 5 parts, \pm 1 part, of salt by weight in 95 parts of distilled water. The pH range of the mixture shall be within 6.5 and 7.2.
 - ii. Turn on the corrosion chamber at least 8 hours prior to placing the mounting hardware in the chamber. This allows the chamber to fully "warm-up".
 - iii. After the chamber has warmed-up, test the pH range of the collected salt fog. Verify that the pH is between 6.5 – 7.2.
 - iv. Select various mounting hardware specimens that will be placed in the chamber. Photograph these selected lift attachment hardware pieces.
 - v. Segregate lift attachment hardware designed to be located within the occupant compartment above 20.5 in (the maximum wheel diameter of the wheelchair test device) from the floor, and photograph and identify as "Upper" attachment hardware. **DO NOT MARK THIS HARDWARE**, but rather, take care to maintain separation and positive identification throughout the test.
 - vi. Remove any surface coating or material not intended for permanent retention on the metal lift attachment hardware during service life (e.g. oil, Vaseline[®], any temporary corrosion inhibitor, etc.).
 - vii. Clean the parts suitably, using appropriate chemicals and methods for the lift attachment hardware materials being tested.

NOTE: Parts coated with paints or nonmetallic coatings, need not be cleaned, but also not handled excessively.

13. COMPLIANCE TEST EXECUTION....Continued

- viii. Unless otherwise specified, the lift attachment hardware shall be supported or suspended between 15° and 30° from the vertical and preferably parallel to the principal direction of flow of fog through the chamber, based upon the dominant surface being tested. Direct the nozzles so that none of the spray can impinge directly on the specimens. Document angle of lift hardware in [**Data Sheet 5: Lift Attachment Hardware Salt Spray Test.**](#)
 - ix. The specimens shall not contact each other or any metallic material or any material capable of acting as a wick.
 - x. Each part shall be placed as to permit free settling of fog on all specimens.
 - xi. Salt solution from one specimen shall not drip on any other specimen.
 - xii. Maintain the compressed air supply to the nozzles between 69 and 172 kN/m² (10 and 25 psig). Document in [**Data Sheet 5: Lift Attachment Hardware Salt Spray Test.**](#)
- b. Subject lift attachment hardware to a period of 24 hours of exposure to salt spray. Document time of first exposure and pH (6.5-7.2) of collected salt fog in [**Data Sheet 5: Lift Attachment Hardware Salt Spray Test.**](#)
- c. After a period of 24 hours from the beginning of the Environmental Resistance test, remove the lift attachment hardware from the test chamber and let dry under normal laboratory conditions for 1 hour. Document first drying time in [**Data Sheet 5: Lift Attachment Hardware Salt Spray Test.**](#)
- NOTE:** Upper lift attachment hardware ARE NOT TO BE RETURNED TO THE TEST CHAMBER.
- d. Wash any surface of the lift attachment exposed to the salt spray thoroughly with water to remove salt, and let dry under laboratory conditions for at least 24 hours. Document second drying time in [**Data Sheet 5: Lift Attachment Hardware Salt Spray Test.**](#)
- e. After a drying period of at least 24 hours, visually examine the lift attachment hardware for ferrous corrosion. Record findings in [**Data Sheet 5: Salt Spray Test following a Drying Period**](#) and photograph significant surfaces.
- f. If ferrous corrosion is visually confirmed, attempt to contact each surface with ferrous corrosion evident using a 20 mm diameter sphere. Record findings in [**Data Sheet 5: Salt Spray Test following a Drying Period**](#) and photograph contact. Contact of a surface with ferrous corrosion using the test sphere constitutes a test failure.
- g. Re-position the lift attachment hardware in the test chamber and continue with the Environmental Resistance Test for a period of 24 hours of exposure to salt

13. COMPLIANCE TEST EXECUTION....Continued

spray. Document time of second exposure and pH (6.5-7.2) of collected salt fog in [Data Sheet 5: Lift Attachment Hardware Salt Spray Test.](#)

- h. After the second period of 24 hours of the Environmental Resistance test, remove the lift attachment hardware from the test chamber and let dry under laboratory conditions for 1 hour. Document third drying time in [Data Sheet 5: Lift Attachment Hardware Salt Spray Test.](#)
 - i. Wash any surface of the lift attachment exposed to the salt spray thoroughly with water to remove salt, and let dry under laboratory conditions for at least 24 hours. Document fourth drying time in [Data Sheet 5: Lift Attachment Hardware Salt Spray Test.](#)
 - j. After a drying period of at least 24 hours, visually examine the internal lift attachment hardware for ferrous corrosion. Record findings in [Data Sheet 5: Salt Spray Test following a Drying Period](#) and photograph significant surfaces.
 - k. If ferrous corrosion is visually confirmed, attempt to contact each surface with ferrous corrosion evident using a 20 mm diameter sphere and record findings in [Data Sheet 5: Salt Spray Test following a Drying Period](#) and photograph contact. Contact of a surface with ferrous corrosion using the test sphere constitutes a test failure.
 - l. Verify continuing function of all the performance aspects of the lift and associated attachment hardware. Visually record operation function, and note findings in [Data Sheet 5: Salt Spray Test following a Drying Period.](#)
5. *For Externally Mounted Lift and Associated Attachment Only*
- a. ASTM Procedure B117-73 titled "Standard Method of Salt Spray (Fog) Testing" will be followed using the basic steps below:
 - i. Prepare a salt solution by dissolving 5 parts, \pm 1 part, of salt by weight in 95 parts of distilled water. The pH range of the mixture shall be within 6.5 and 7.2.
 - ii. Turn on the corrosion chamber at least 8 hours prior to placing the mounting hardware in the chamber. This allows the chamber to fully "warm-up".
 - iii. After the chamber has warmed-up, test the pH range of the collected salt fog. Verify that the pH is between 6.5 – 7.2.
 - iv. Photograph the assembled externally mounted lift and all associated attachment hardware.
 - v. Remove any surface coating or material not intended for permanent retention on the metal lift attachment hardware during service life (e.g. oil, Vaseline[®], any temporary corrosion inhibitor, etc.).

13. COMPLIANCE TEST EXECUTION....Continued

- vi. Clean the parts suitably, using appropriate chemicals and methods for the lift attachment hardware materials being tested.

NOTE: Parts coated with paints or nonmetallic coatings, need not be cleaned, but also not handled excessively.

- vii. Unless otherwise specified, the lift shall be located preferable $\pm 45^\circ$ to the principal direction of flow of fog through the chamber if installed upon a test jig. Direct the nozzles so that none of the spray can impinge directly on the specimens. If the lift to be tested is mounted to a vehicle, the COTR will determine the optimum configuration to simulate actual outside environmental exposure. Document angle of lift hardware in [**Data Sheet 5: Externally Mounted Lift and Attachment Salt Spray Test.**](#)
- viii. The specimens shall not contact each other or any metallic material or any material capable of acting as a wick.
- ix. Each part shall be placed as to permit free settling of fog on all specimens.
- x. Salt solution from one specimen shall not drip on any other specimen.
- xi. Maintain the compressed air supply to the nozzles between 69 and 172 kN/m² (10 and 25 psig). Document in [**Data Sheet 5: Externally Mounted Lift and Attachment Salt Spray Test.**](#)
- m. Subject the lift and associated attachment hardware to a period of 24 hours of exposure to salt spray. Document time of first exposure and pH (6.5-7.2) of collected salt fog in [**Data Sheet 5: Externally Mounted Lift and Attachment Salt Spray Test.**](#)
- n. After a period of 24 hours from the beginning of the Environmental Resistance test, remove the lift and associated attachment hardware from the test chamber and let dry under normal laboratory conditions for 1 hour. Document first drying time in [**Data Sheet 5: Externally Mounted Lift and Attachment Salt Spray Test.**](#)
- o. Wash any surface of the lift and associated attachment hardware exposed to the salt spray thoroughly with water to remove salt, and let dry under laboratory conditions for at least 24 hours. Document second drying time in [**Data Sheet 5: Externally Mounted Lift and Attachment Salt Spray Test.**](#)
- p. After a drying period of at least 24 hours, visually examine the lift and associated attachment hardware for ferrous corrosion. Record findings in [**Data Sheet 5: Salt Spray Test following a Drying Period**](#) and photograph significant surfaces.
- q. If ferrous corrosion is visually confirmed, attempt to contact each surface with ferrous corrosion evident using a 20 mm diameter sphere. Record findings in [**Data Sheet 5: Salt Spray Test following a Drying Period**](#) and photograph

13. COMPLIANCE TEST EXECUTION....Continued

contact. Contact of a surface with ferrous corrosion using the test sphere constitutes a test failure.

- r. Verify continuing function of all the performance aspects of the lift and associated attachment hardware. Visually record operation function, and note findings in [**Data Sheet 5: Salt Spray Test following a Drying Period.**](#)

13.6 THRESHOLD WARNING SIGNAL TEST

1. Verify adequate installation on a vehicle or test fixture, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Place the wheelchair in the vehicle or on the test fixture facing outwards toward the platform lift.
3. Maneuver the lift platform to the vehicle floor level loading position.
4. Using the wheelchair, place one front wheel of the unloaded wheelchair on any portion of the platform threshold area defined in S7.4 of §571.403 of 49 CFR.
5. Photograph the location of the wheelchair on the platform threshold area
6. *Public Use Lifts*
 - a. Move the platform down until the alarm is actuated. If the alarm is not actuated, a test failure has occurred.
 - b. Verify both a Flashing Red Beacon **and** Audible Alarm. Record the vertical distance between the platform and the platform threshold area in [**Data Sheet 6: Public Use Lift Threshold Warning Signal**](#) and photograph this location. If the vertical distance is greater than 25mm a test failure has occurred.
 - c. Photograph the Flashing Red Beacon.
 - d. Using a Light meter measure the luminance of the Flashing Red Beacon at a location of 914 mm (3 ft) above the center of the platform threshold area ([**Figure 2**](#)) and record the output in [**Data Sheet 6: Public Use Lift Threshold Warning Signal**](#). If the intensity is less than 20 candela, a test failure has occurred.
 - e. Count the number of flashes and beeps in 10 seconds. Record in [**Data Sheet 6: Public Use Lift Threshold Warning Signal**](#). If the frequency is not between 1 and 2 Hz, a test failure has occurred.

13. COMPLIANCE TEST EXECUTION....Continued

- f. Verify the Flashing Red Beacon is visible at an inclusive angle of 238° (Maximum level of human peripheral vision plus 15° side to side head movement) measured perpendicular to the platform threshold area center bisecting the transverse plane in an inward direction ([Figure 15](#)). If the Flashing Red Beacon is not visible within this range, a test failure has occurred. Record in [Data Sheet 6: Public Use Lift Threshold Warning Signal](#).
 - g. Using a sound level meter, measure the audible alarm intensity and frequency at a location of 914 mm (3 ft) above the center of the platform threshold area ([Figure 2](#)). Record the output in [Data Sheet 6: Public Use Lift Threshold Warning Signal](#). If the intensity is less than 85 dBA or the frequency is less than 500 or more than 3000 Hz, a test failure has occurred.
7. *Private Use Lifts (Other than over the floor lifts)*
- a. Move the platform down until the alarm is actuated. If the alarm is not actuated, a test failure has occurred.
 - b. Verify a Flashing Red Beacon **or** Audible Alarm. Record the vertical distance between the platform and the platform threshold area in [Data Sheet 6: Private Use Lift Threshold Warning Signal](#) and photograph this location. If the vertical distance is greater than 25mm a test failure has occurred. (Private Use lifts only need one of the alarms: visual or audible).
 - c. If the lift is equipped with a Flashing Red Beacon:
 - i. Photograph the Flashing Red Beacon.
 - ii. Measure the intensity and frequency of the Flashing Red beacon at a location of 914 mm (3 ft) above the center of the platform threshold area ([Figure 2](#)) and record the output in [Data Sheet 6: Private Use Lift Threshold Warning Signal](#). If the intensity is less than 20 candela, or the frequency is less than 1 or more than 2 Hz, a test failure has occurred.
 - iii. Verify the Flashing Red Beacon is visible at an inclusive angle of 238° (Maximum level of human peripheral vision plus 15° side to side head movement) measured perpendicular to the platform threshold area center bisecting the transverse plane in an inward direction ([Figure 15](#)). If the Flashing Red Beacon is not visible within this range, a test failure has occurred. Record in [Data Sheet 6: Private Use Lift Threshold Warning Signal](#).

NOTE: If a lift has only a visual alarm and the lift manufacturer specifies that the passenger must load onto the platform a forward direction from the vehicle floor, the Flashing Red Beacon visibility is measured in an outward direction ([Figure 15](#)).

13. COMPLIANCE TEST EXECUTION....Continued

- iv. If the lift is equipped with an audible alarm, measure the audible alarm intensity and frequency at a location of 914 mm (3 ft) above the center of the platform threshold area and record the output in [Data Sheet 6: Private Use Lift Threshold Warning Signal](#). If the intensity is less than 85 dBA or frequency of less than 500 or more than 3000 Hz, a test failure has occurred.
- d. Remove the test wheelchair wheel from the platform threshold area to deactivate the alarm

13.7 Wheelchair retention device impact test

NOTE: In the case of private use lifts perform all instructions unless the operating instructions specify a required direction of wheelchair movement onto the platform. When a direction is indicated in the operating instructions, perform steps 1 - 7 (Forward Outward Barrier Impact), steps 1 – 6 and 8 (Rearward Outward Barrier Impact), or step 9 (Rotary Platform Lifts) with the test device oriented as required by the operating instructions. Document in [Data Sheet 7: Direction of Wheelchair Movement onto the Platform](#).

13.7.1 Platform Lifts

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Fully charge the propulsion battery of the wheelchair, and verify a fully functional drive system.
3. If the wheelchair retention device is an outer barrier, adjust the footrests of the wheelchair such that at their lowest point they have a height $25 \text{ mm} \pm 2 \text{ mm}$ (1 inch \pm 0.08 inches) less than the height of the outer barrier. Record the height of the outer barrier, and footrest, perpendicular to the platform surface, in [Data Sheet 7: Wheelchair Specifications](#).
4. If the wheelchair retention device is not an outer barrier, adjust the footrests such that at their lowest point they have a height $50 \text{ mm} \pm 2 \text{ mm}$ (2 inches \pm 0.08 inches) above the platform. Record this value in [Data Sheet 7: Wheelchair Specifications](#).
5. Remove anti-tipping bars if the wheelchair test device if so equipped.
6. Place the two (2) contacts at the end of the platform surface, closest to the outer barrier. The “Stop” contact should be placed where contact is made when the footrests just touch the outer barrier.

13. COMPLIANCE TEST EXECUTION....Continued

7. Forward Outward Barrier Impact

- a. Perform speed trial(s) to determine a reliable distance at which the forward speed of the test device will be not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph) under full power. Record these measured distances, with associated speeds in [Data Sheet 7: Forward Impact Test - Speed Trials](#). The distance measured is from start of wheelchair to where the speed is recorded.
- b. Place the lift platform at the vehicle floor loading position.
- c. Center the wheelchair at distance from the outer barrier to achieve an unloaded forward impact velocity of not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph). Photograph and record the position of the forward most element of the test device on the platform, using the deployed wheelchair retention device as a datum, in [Data Sheet 7: Forward Impact Velocity Test](#).
- d. Include a means of recording impact speed of the test device within 100 mm (4 inches) of the wheelchair retention device.
- e. Accelerate the test device onto the platform by placing a rubber band on the controller in order to impact the wheelchair retention device at not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph). Digitally video record this event, and submit with the compliance test report. Record the impact speed in [Data Sheet 7: Forward Impact Velocity Test](#).

NOTE: Maintain power to the drive motors until all wheelchair motion has ceased except rotation of the drive wheels.

- f. Turn off power to the drive motors.
- g. Note and photograph the position of the wheelchair test device after its motion has ceased following the impact, and record in [Data Sheet 7: Forward Impact Velocity Test](#). If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and photograph any test failure in [Data Sheet 7: Forward Impact Velocity Test](#).
- h. Move the lift platform to the ground level loading position, stopping once between the two positions. If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and photograph any test failure in [Data Sheet 7: Forward Impact Velocity Test](#).
- i. If necessary, adjust or replace the footrests to restore them to their original condition. Note any adjustments or replacement in [Data Sheet 7: Forward Impact Velocity Test](#).

13. COMPLIANCE TEST EXECUTION....Continued

8. Rearward Outward Barrier Impact

- a. Move the lift platform to the vehicle floor loading position.
- b. Perform speed trial(s) to determine a reliable distance at which the forward speed of the test device will be not less than 1.75 m/s (3.9 mph) and not more than 1.85 m/s (4.1mph) under full power. Record these measured distances, with associated speeds in [Data Sheet 7: Rearward Impact Test - Speed Trials](#).
- c. Center the wheelchair at distance from the outer barrier to achieve an unloaded rearward impact velocity of not less than 1.75 m/s (3.9 mph) and not more than 1.85 m/s (4.1 mph). Photograph and record the rearward most element of the test device on the platform, using the deployed wheelchair retention device as a datum, in [Data Sheet 7: Rearward Impact Velocity Test](#).
- d. Include a means of recording impact speed of the test device within 100 mm (4 inches) of the wheelchair retention device.
- e. Accelerate the test device onto the platform by placing a rubber band on the controller in order to impact the wheelchair retention device at not less than 1.75 m/s (3.9 mph) and not more than 1.85 m/s (4.1 mph). Digitally video record this event, and submit with the compliance test report. Record the impact speed in [Data Sheet 7: Rearward Impact Velocity Test](#).

NOTE: Maintain power to the drive motors until all wheelchair motion has ceased except rotation of the drive wheels.

- f. Turn off power to the drive motors.
- g. Note and photograph the position of the wheelchair test device after its motion has ceased following the impact, and record in [Data Sheet 7: Rearward Impact Velocity Test](#). If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and Photograph any test failure in [Data Sheet 7: Rearward Impact Velocity Test](#).
- h. Move the lift platform to the ground level loading position, stopping once between the two positions. If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and photograph any test failure in [Data Sheet 7: Rearward Impact Velocity Test](#).
- i. If necessary, adjust or replace the footrests to restore them to their original condition. Note any adjustments or replacement in [Data Sheet 7: Rearward Impact Velocity Test](#).

13. COMPLIANCE TEST EXECUTION....Continued

13.7.2 Rotary Platform Lifts

9. Rotary Platform Lifts

NOTE: In the case of private use lifts perform all instructions unless the operating instructions specify a required direction of wheelchair movement onto the platform. When a direction is indicated in the operating instructions, perform steps 9.a – 9.d (Forward Outward Barrier Impact) or steps 9.a – 9.c and 9.e (Rearward Outward Barrier Impact) with the test device oriented as required by the operating instructions.

- a. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
- b. Adjust the test device footrests to the shortest length. Photograph footrest adjustment length, and record in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment](#).
- c. Fully charge the propulsion battery of the test device, and verify a fully functional drive system.
- d. Forward Outward Barrier Impact
 - i. Position the lift platform surface $90 \text{ mm} \pm 10 \text{ mm}$ (3.5 inches \pm 0.4 inches) above the ground level loading position. Note the height in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Forward Impact](#).
 - ii. Perform speed trial(s) to determine a reliable test device control position at which the maximum forward speed of the unloaded, unrestrained test device will be not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph). Record these measured positions, with associated speeds in [Data Sheet 7: Rotary Platform Forward - Speed Trials](#).
 - iii. Position the test device with its plane of symmetry coincident with the lift reference plane and slowly move the test device in the forward direction until it contacts a wheelchair retention device.
 - iv. Activate the test device controller such that, if the test device were unloaded and unrestrained on a flat, level surface, it would achieve a maximum forward speed of not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph). Digitally video record the event, and include with the compliance test report.

NOTE: Maintain power to the drive motors until all wheelchair motion has ceased except rotation of the drive wheels.

- v. Turn off power to the drive motors.

13. COMPLIANCE TEST EXECUTION....Continued

- vi. Note and photograph the position of the wheelchair after its motion has ceased following the test, and record in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Forward Impact](#). If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and photograph any test failure in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Forward Impact](#).
 - vii. If necessary, adjust or replace the footrests to restore them to their original condition. Note any adjustments or replacement in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Forward Impact](#).
- e. Rearward Outward Barrier Impact
- i. Position the lift platform surface 90 mm ± 10 mm (3.5 inches ± 0.4 inches) above the ground level loading position. Note the platform height in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Rearward Impact](#).
 - ii. Perform speed trial(s) to determine a reliable test device control position at which the maximum rearward speed of the unloaded, unrestrained test device will be not less than 1.75 m/s (3.9 mph) and not more than 1.85 m/s (4.1 mph). Record these measured positions, with associated speeds in [Data Sheet 7: Rotary Platform Rearward - Speed Trials](#).
 - iii. Position the test device with its plane of symmetry coincident with the lift reference plane and slowly move the test device in the rearward direction until it contacts a wheelchair retention device.
 - iv. Activate the test device controller such that, if the test device were unloaded and unrestrained on a flat, level surface, it would achieve a maximum rearward speed of not less than 1.75 m/s (3.9 mph) and not more than 1.85 m/s (4.1 mph). Digitally video record the event, and include with the compliance test report.

NOTE: Maintain power to the drive motors until all wheelchair motion has ceased except rotation of the drive wheels.

- v. Turn off power to the drive motors.
- vi. Note and photograph the position of the wheelchair after its motion has ceased following the test, and record in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Rearward Impact](#). If all wheels are not contacting the platform surface, after motion has ceased, a test failure has occurred. Note and photograph any test failure in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Rearward Impact](#).
- vii. If necessary, adjust or replace the footrests to restore them to their original condition. Note any adjustments or replacement in [Data Sheet 7: Rotary Platform Lift Footrest Adjustment – Rearward Impact](#).

10. Wheelchair Retention Deployment

13. COMPLIANCE TEST EXECUTION....Continued

- a. Place the lift at the vehicle level loading position with the wheelchair test device centered on the platform surface.
- b. Using the controls, lower the lift towards the ground
- c. Cease motion of the lift when the wheelchair retention device starts to release.
- d. At this position, measure the distance between the ground and the lowest part of the platform surface. Document in [Data Sheet 7: Wheelchair Retention Deployment](#). If any part of the platform surface is below a horizontal plane 75 mm (3 inches) above the ground, a failure has occurred.

13.8 INNER ROLL STOP TEST

1. Forward Impact

- a. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
- b. Place the platform at the ground level loading position, such that the platform is level.
- c. Record the wheelchair specification in [Data Sheet 8: Wheelchair Specifications](#).
- d. *Private Use Lift Only*
 - i. If the lift is private, verify if the lift has an inner roll stop. Or, verify if there are operating instructions that contain a warning that the wheelchairs should back onto the platform when entering from the ground. Document in [Data Sheet 8: Private Use Lift Inner Roll Stop](#). (This is the only inner roll stop requirement for private lifts)
- e. *Public Use Lift Only*
 - i. Adjust the footrests of the wheelchair test device to the shortest length. Photograph footrest position and record height from the ground in [Data Sheet 8: Public Use Lift Inner Roll Stop](#). Also record the height of the inner roll stop in [Data Sheet 8: Public Use Lift Inner Roll Stop](#).
 - ii. Remove anti-tipping bars if the wheelchair test device is so equipped.
 - iii. Fully charge the propulsion battery of the wheelchair test device, and verify a fully functional drive system.
 - iv. Set up two (2) contact closure switches 200 mm apart on a cleared area in the laboratory. Measure 1900mm back from the "Start" contact. Place the wheelchair with the front point of the footrests at this point. With the chair

13. COMPLIANCE TEST EXECUTION....Continued

set on Power Level 4:78%, use a rubber band to toggle the speed controller backwards. Record the time it takes to cross the “Start” and “Stop” contacts.

- v. Perform speed trial(s) to determine a reliable distance at which the forward speed of the test device will be not less than 1.5 m/s (3.4 mph) and not more than 1.6 m/s (3.6 mph) under full power. Record these measured distances, with associated speeds in [Data Sheet 8: Forward Impact Test - Speed Trials](#).
- vi. Center the wheelchair at distance from the inner roll stop to achieve an unloaded forward impact velocity of not less than 1.5 m/s (3.4 mph) and not more than 1.6 m/s (3.6 mph). Photograph and record the position of the forward most element of the test device on the platform, using the inner roll stop as a datum, in [Data Sheet 8: Forward Impact Velocity Test](#).
- vii. Include a means of recording impact speed of the test device within 100 mm (4 inches) of the wheelchair retention device.
- viii. Accelerate the test device onto the platform by placing a rubber band on the controller in order to impact the inner roll stop at a speed of not less than 1.5 m/s (3.4 mph) and not more than 1.6 m/s (3.6 mph). Digitally video record this event, and submit with the compliance test report. Record the impact speed in [Data Sheet 8: Forward Impact Velocity Test](#).
- ix. If the front wheels of the test device pass over the edge of the platform where the inner roll stop is located, a test failure has occurred. Note and photograph any test failure in [Data Sheet 8: Forward Impact Velocity Test](#).
- x. If necessary, adjust or replace the footrests to restore them to the condition they were in prior to the impact. Note any adjustments or replacement of footrests in [Data Sheet 8: Forward Impact Velocity Test](#).

2. Forward Override

- a. Perform speed trial(s) to determine a reliable distance at which the forward speed of the test device will be not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph) under full power. Record these measured distances, with associated speeds in [Data Sheet 8: Forward Override Test - Speed Trials](#). The distance measured is from start of wheelchair to where the speed is recorded.
- b. Center the wheelchair on the platform facing the inner roll stop. Move the wheelchair test device in the forward direction until it contacts the inner roll stop.
- c. Photograph this position.

13. COMPLIANCE TEST EXECUTION....Continued

- d. Activate the test device controller such that, if the test device were unloaded and unrestrained on a flat, level surface, it would achieve a maximum forward speed of not less than 2.0 m/s (4.4 mph) and not more than 2.1 m/s (4.7 mph). Digitally video record the event, and include with the compliance test report.
- e. After impact, use the lift controls to move the platform to vehicle level. If any portion of the test device is being contacted simultaneously with a portion of the lift platform and any other structure, throughout the lift's range of passenger operation, a test failure has occurred. Note and photograph any test failure in [Data Sheet 8: Forward Override Velocity Test](#).

13.9 STATIC LOAD TEST I —WORKING LOAD

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Fit the lift with data gathering instrumentation to measure and record vertical and horizontal velocities and accelerations at the geometric center of the platform, and the geometric center of the top, horizontal surface of the standard load when upon the lift platform
3. Control Systems
 - a. Verify that there is a control that enables and disables the lift system and is labeled as "Power". This control has two labeled states: "On" and "Off". This control can be on the motor/pump assembly or the hand pendant. If the lift is not labeled, or labeled otherwise, a test failure has occurred. Record in [Data Sheet 9: Control Systems](#).
 - b. Photograph the Power control.
 - c. Turn the Power function to the "On" state.
 - d. Verify an indicator light on the controls illuminates to inform the operator that the lift is enabled. Document in [Data Sheet 9: Control Systems](#). If an indicator light is not present, or fails to illuminate, a test failure has occurred. Verify by the following steps:
 - i. Using the controls, move the lift in any direction.
 - ii. Turn the Power function to the "Off" state.
 - iii. Using the controls, attempt to move the lift. If the "Off" state does not prevent operation and turn off the indicator light, a test failure has occurred. Document in [Data Sheet 9: Control Systems](#).

13. COMPLIANCE TEST EXECUTION....Continued

- e. Photograph the pendant control.
- f. Verify the control used to deploy the lift is labeled “Deploy” or “Unfold”. If the lift is not labeled, or labeled otherwise, a test failure has occurred. Record in [Data Sheet 9: Control Systems](#).
- g. Verify the control used to lower the lift is labeled “Down” or “Lower”. If the lift is not labeled, or labeled otherwise, a test failure has occurred. Record in [Data Sheet 9: Control Systems](#).
- h. Verify the control used to raise the lift is labeled “Up” or “Raise”. If the lift is not labeled, or labeled otherwise, a test failure has occurred. Record in [Data Sheet 9: Control Systems](#).
- i. Verify the control used to stow the lift is labeled “Stow” or “Fold”. If the lift is not labeled, or labeled otherwise, a test failure has occurred. Record in [Data Sheet 9: Control Systems](#).
- j. Verify that all characters on each control are at least 2.5 mm (0.1 inches) in height in [Data Sheet 9: Character Height Verification](#).
- k. Position the lift in the stowed position
- l. Using the lift control, deploy the platform to the vehicle floor loading position. Without deactivating the deploy control, at any moment during the deployment, activate any other lift control (Stow, Up, Down) other than “Power”. The lift should continue to deploy, or stop. For any other response, a test failure has occurred. Note failure in [Data Sheet 9: Control other than Power](#).
- m. Using the lift control, lower the lift platform from the vehicle floor loading position to the ground level loading position. Without deactivating the lower control, at any moment during the lowering, activate any other lift control (Up, Stow, Deploy) other than “Power”. The lift should continue to lower, or stop. For any other response, a test failure has occurred. Note failure in [Data Sheet 9: Control other than Power](#).
- n. Using the lift control, raise the lift platform from the ground level loading position to the vehicle floor level loading position. Without deactivating the raise control, at any moment during the raising, activate any other lift control (Down, Stow, Deploy) other than “Power”. The lift should continue to rise, or stop. For any other response, a test failure has occurred. Note failure in [Data Sheet 9: Control other than Power](#).

13. COMPLIANCE TEST EXECUTION....Continued

- o. Using the lift control, stow the lift. Without deactivating the stow control, at any moment during the stowing, activate any other lift control (Deploy, Up, Down) other than “Power”. The lift should continue to stow, or stop. For any other response, a test failure has occurred. Note failure in [Data Sheet 9: Control other than Power.](#)
 - p. Document results from steps 3.k – 3.o in [Data Sheet 9: Control System Operation.](#)
 - q. If there is a failure in the control system, check all the interlocks to verify that their operation is not prevented. Record in [Data Sheet 9: Control System Operation.](#)
4. Identification of Operating Functions and Control Location: Public Use Lifts Only
- a. Illuminate the vehicle’s headlamps, if installed upon a vehicle, or provide power (battery or 100A power supply) to the lift.
 - b. Verify the characters of the lift control identifiers are illuminated. If the characters fail to illuminate, or are incapable of illumination, this constitutes a test failure. Note failure in [Data Sheet 9: Controls and Identifiers – Public Lifts Only.](#)
 - c. Extinguish the vehicle’s headlamps, or remove power to the lift that provides illumination to the lift controls.
 - d. Oriented outward from and perpendicular to the control panel face, photograph the control panel face(s), capturing the lift platform and associated lift components.
 - e. Verify all controls for lift function are positioned together, and a person facing the controls has a direct, unobstructed view of the platform lift passenger, and passenger’s mobility aid, if applicable. If the controls are not positioned together or the view of the lift platform is obstructed, or not within the line of sight, a test failure has occurred. Note failure in [Data Sheet 9: Controls and Identifiers – Public Lifts Only.](#)
5. Operating Instructions
- a. *Public Use Lifts*
 - i. Photograph lift operating instructions that are located near the controls. The photograph should be perpendicular to, and out from the face of the instruction location at a distance such that the wording of the instructions is clear and legible. It should also be taken at an orientation and distance

13. COMPLIANCE TEST EXECUTION....Continued

such that the location of the instructions can be referenced from the location of the controls.

- ii. Verify the lift operating instructions, including backup operations, are located near the controls and all characters have a minimum height of 2.5 mm (0.1 inches) and the wording is in English. If no instructions are provided, not near the lift controls, or are not of the character type or language specified, a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Public Lifts Only](#).
- iii. Verify the statement “DOT-Public Use Lift” is included within the instructions. If the statement is not present, or not identical, a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Public Lifts Only](#).

b. *Private Use Lifts*

- i. Photograph lift operating instructions that are located near the controls. The photograph should be perpendicular to, and out from the face of the instruction location at a distance such that the wording of the instructions is clear and legible. It should also be taken at an orientation and distance such that the location of the instructions can be referenced from the location of the controls.
- ii. Verify the lift operating instructions, including backup operations, are located near the controls and all characters have a minimum height of 2.5 mm (0.1 inches) and the wording is in English. If no instructions are provided, not near the lift controls, or are not of the character type or language specified, a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Private Lifts Only](#).
- iii. Verify the statement “DOT-Private Use Lift” is included within the instructions. If the statement is not present, or not identical, a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Private Lifts Only](#).
- iv. Verify the manufacturer’s rated load is included within the instructions. If the statement is not present, a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Private Lifts Only](#).
- v. If applicable, verify the instructions indicating that the wheelchair occupant must back onto the lift when loading from the ground are included within the instructions. If the statement is located other than with the lift operating instructions a test failure has occurred. Document in [Data Sheet 9: Operating Instructions – Private Lifts Only](#).

6. Backup Operation

- a. Move the “Power” control to the “Off” state.

13. COMPLIANCE TEST EXECUTION....Continued

- b. Verify prevention of lift operation, and the indicator light is extinguished. If an indicator light is not extinguished, or the lift continues to be operational, a test failure has occurred. Document in [**Data Sheet 9: Backup Operation – “Off” State.**](#)
 - c. Place the platform in the stowed position.
 - d. Using only the backup operating mode, in accordance with the manufacturer’s backup operating instructions, do the following:
 - i. Deploy the platform to the vehicle floor loading position.
 - ii. Lower the lift platform from the vehicle floor loading position to the ground level loading position stopping once between the two positions.
 - iii. Raise the lift platform from the ground level loading position to the vehicle floor level loading position, stopping once between the two positions.
 - iv. Stow the lift platform.
 - e. Record steps 6.d.i – 6.d.iv operations data in [**Data Sheet 9: Backup Operation – “Off” State.**](#)
 - f. Verify the inner roll stop, and wheelchair retention device(s) are manually deployable through all backup operations steps 6.d.i – 6.d.iv. If the inner roll stop and wheelchair retention device(s) are not manually deployable through all backup operations, a test failure has occurred. Document in [**Data Sheet 9: Backup Operation – “Off” State.**](#)
 - g. Verify that the owner’s manual contains information on the manual backup operation and manual operation of the wheelchair retention device (outer barrier) and inner roll stop during backup operation of the lift. Document in [**Data Sheet 9: Backup Operation – “Off” State.**](#)
 - h. Photograph the backup operation instructions.
7. Maximum Platform Velocity
- a. On the outer edge guard of the platform, mark a reference point that lines up with the geometric center of the platform surface.
 - b. Position the lift at the vehicle loading level.
 - c. Using the lift control, lower the lift to ground level. Record the time it takes to lower the lift from vehicle to ground positions. Record in [**Data Sheet 9: Maximum Platform Velocity – Unloaded Lift.**](#)

13. COMPLIANCE TEST EXECUTION....Continued

- d. Using the powered lift controls only, attempt to further lower the platform lift. If the vehicle is raised, or if the lift is capable of raising the test fixture if unrestrained, a test failure has occurred. Note the failure.
- e. Using the lift control, raise the lift back to vehicle level. Record the time it takes to raise the lift from ground to vehicle positions. Record in [Data Sheet 9: Maximum Platform Velocity – Unloaded Lift](#).
- f. Measure both the horizontal and vertical distance traveled during the Up/Down movements using the marked reference point. Record in [Data Sheet 9: Maximum Platform Velocity – Unloaded Lift](#).
- g. From vehicle level, use the lift control to stow the platform. Record the time it takes to stow the platform. Record in [Data Sheet 9: Maximum Platform Velocity – Unloaded Lift](#).
- h. From the stowed position, deploy the lift to vehicle level position. Record the time it takes to deploy the platform. Record in [Data Sheet 9: Maximum Platform Velocity – Unloaded Lift](#).
- i. Measure both the horizontal and vertical distance traveled during the Stow/Deploy movements using the marked reference point. Record in [Data Sheet 9: Maximum Platform Velocity – Unloaded Lift](#).
- j. Repeat steps 7.c – 7.f with the Standard Load centered on the Platform surface and record in [Data Sheet 9: Maximum Platform Velocity – Loaded Lift](#).

NOTE: The standard load cannot be placed on the platform during the Stow & Deploy movements.

- k. For all movements, calculate the velocity using the following equation:

$$\text{velocity} = \frac{\text{distance}}{\text{time}}$$

- l. If the Lower/Raise operations have a velocity greater than 152mm/s (6 inches/s) a test failure has occurred. If the Deploy/Stow operations have a velocity greater than 305mm/s a test failure has occurred. Document in [Data Sheet 9: Maximum Platform Velocity](#).

8. Maximum Platform Acceleration

- a. Securely mount two calibrated accelerometers to the geometric center of the platform surface in the x and z-axis.

13. COMPLIANCE TEST EXECUTION....Continued

- b. Photograph the accelerometers mounted to the lift platform.
- c. Set up instrumentation to record both accelerometers at 100 Hz.
- d. Place the platform at the ground floor loading position.
- e. While recording the accelerations, raise the lift platform from the ground level loading position to the vehicle floor level loading position, using the Up or Raise control.
- f. Setup instrumentation to record accelerations from the vehicle floor level loading position to the ground level loading position.
- g. With the two accelerometers still mounted to the platform, carefully place the standard load and test pallet on the platform. Center the load over the geometric center.
- h. Repeat steps 8.c – 8.f with the standard load.
- i. Remove the accelerometers from the platform.
- j. Export all four (4) data sets.

NOTE: Acceleration measurements are to be filtered with a channel frequency class (CFC) 3 filter. The filter must meet the requirements of SAE Recommended Practice J211/1, rev. Mar 95, with $F_H = 3$ Hz and $F_N = 5$ Hz.

- k. From the processed/plotted data determine the maximum acceleration in both the x (horizontal) and z (vertical) axis for all 4 data sets. Record in [Data Sheet 9: Maximum Platform Acceleration](#).
- l. If any of the accelerations exceed $0.3g$ ($2.94m/s^2$) a test failure has occurred.

9. Maximum Noise Level: Public Use Lifts Only

- a. With the standard load and test pallet on the platform record the noise level at a location 12 inches (305 mm) out from the vertical centerline of the face of the lift control ([Figure 6](#)) or pendant control ([Figure 5](#)); both if practicable.. Record the maximum noise level in [Data Sheet 9: Maximum Noise Level – Public Use Lifts Only](#) during the following movements:
 - i. Lower/Down
 - ii. Raise/ Up
- b. Remove the standard load and test pallet from the lift.

13. COMPLIANCE TEST EXECUTION....Continued

- c. Record the noise level at a location 12 inches (305 mm) out from the vertical centerline of the face of the lift control panel during the following movements:
 - i. Lower/Down
 - ii. Raise/ Up
 - iii. Stow/ Fold
 - iv. Deploy/ Unfold
- d. Record all noise levels in [Data Sheet 9: Maximum Noise Level – Public Use Lifts Only](#). If the noise level exceeds 80 dBA, a test failure has occurred (Public Use Only).

10. Maximum Platform Velocity, Acceleration, and Noise Level

- a. Summarize whether the velocity, acceleration, and noise level meet the requirements for the various lift operation in [Data Sheet 9: Maximum Velocity, Acceleration, and Noise Level](#).

NOTE: Platform lifts that manually stow and deploy are exempt from the velocity requirement during the deploy and stow lift operations. The Noise level requirement is applicable to Public Use Lifts only.

13.10 FATIGUE ENDURANCE TEST

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Mount contact switches at ground level, vehicle level, and stowed positions.
3. Fit a cycle counter, which is independent from the lift operation counter, to the three (3) contacts. This will be used to keep an official record of the number of cycles completed throughout each portion of the test.
4. On a non-contacted surface of the lift platform, such as the motor/pump, orient a data measurement device(s) to continuously record the lift motor(s) temperature(s), and vertical velocity of the platform throughout the test. The platform may not experience a velocity of greater than 305 mm (12 inches) per second during “stow” and “deploy” operations or a velocity of 152 mm (6 inches) per second for all other lift operations, otherwise a test failure has occurred. Photograph and note failures in [Data Sheet 10: Fatigue Endurance Test](#).
5. Place the lift platform at the ground level loading position.

13. COMPLIANCE TEST EXECUTION....Continued

6. *Public Use Lifts*

- a. Center a standard load, including the test pallet ([Figure 11](#)), on the platform surface.
- b. Start the continuous recording of platform velocity.
- c. Using the cycle counter, start the Up/Down operation, and continue in blocks of 10 cycles, pausing for 1 minute between blocks at ground level.
- d. Monitor lift status, cycle count, and temperature of lift components. Check on the lift at least once every hour. Adjust cycle pause periods, to a maximum pause of 1 minute, to maintain temperatures below manufacturer specification, or degradation of the lift function.
- e. Continue cycling until 3900 cycles have been performed and verified by the lift operation counter, then stop. If the lift is not equipped with an operation counter that records each complete raise/lower cycle, or the operation counter does not agree with the official test cycle counter, a test failure has occurred. Document in [Data Sheet 10: Fatigue Endurance – Public Use Lifts](#).
- f. Remove the standard load and test pallet from the platform.
- g. Raise the platform to the vehicle floor loading position.
- h. Using the cycle counter, start the Stow/Deploy/Lower/Raise operation, and continue in blocks of 10 cycles, pausing for 1 minute between blocks.

NOTE: Lifts that are designed to stow and deploy manually are not subject to the stow/deploy portion of the test cycle. Repeat steps 6.c – 6.e without the standard load in lieu of 6.h – 6.m.

- i. Monitor lift status, cycle count, and temperature of lift components. Check on the lift at least once every hour. Adjust cycle pause periods, to a maximum pause of 1 minute, to maintain temperatures below manufacturer specification, or degradation of the lift function.
- j. Continue cycling until 3900 cycles have been performed, then stop.
- k. Move the platform to the ground level loading position.
- l. Repeat steps 6.a – 6.k, then continue to step 6.m. Document all cycles in [Data Sheet 10: Cycling – Public Use Lifts](#).

13. COMPLIANCE TEST EXECUTION....Continued

- m. Document evidence of separation, fracture, or breakage of any vehicle or lift component. If any vehicle or lift component separates, fractures, or breaks, stop the test, photograph the evidence, and note failure in [Data Sheet 10: Fatigue Endurance – Public Use Lifts](#).
- n. End the continuous recording of platform velocity.

7. Private Use Lifts

- a. Center a standard load, including the test pallet ([Figure 11](#)), on the platform surface. For private use lifts the standard load is either 400 lbs or the lift manufacturer's rated load (whichever is greater).
- b. Start the continuous recording of platform velocity.
- c. Using the cycle counter, start the Up/Down operation, and continue in blocks of 10 cycles, pausing for 1 minute between blocks at ground level.
- d. Monitor lift status, cycle count, and temperature of lift components. Check on the lift at least once every hour. Adjust cycle pause periods, to a maximum pause of 1 minute, to maintain temperatures below manufacturer specification, or degradation of the lift function.
- e. Continue cycling until 2200 cycles have been performed and verified by the lift operation counter, then stop. If the lift is not equipped with an operation counter that records each complete raise/lower cycle, or the operation counter does not agree with the official test cycle counter, a test failure has occurred. Document in [Data Sheet 10: Fatigue Endurance – Private Use Lifts](#).
- f. Remove the standard load and test pallet from the platform.
- g. Raise the platform to the vehicle floor loading position.
- h. Using the cycle counter, start the Stow/Deploy/Lower/Raise operation, and continue in blocks of 10 cycles, pausing for 1 minute between blocks.

NOTE: Lifts that are designed to stow and deploy manually are not subject to the stow/deploy portion of the test cycle. Repeat steps 7.c – 7.e without the standard load in lieu of 7.h – 7.m.

- i. Monitor lift status, cycle count, and temperature of lift components. Check on the lift at least once every hour. Adjust cycle pause periods, to a maximum pause of 1 minute, to maintain temperatures below manufacturer specification, or degradation of the lift function.

13. COMPLIANCE TEST EXECUTION....Continued

- j. Continue cycling until 2200 cycles have been performed, then stop. Record cycle count in Table [Data Sheet 10: Cycling – Private Use Lifts](#).
- k. Move the platform to the ground level loading position.
- l. Repeat steps 7.a – 7.k, then continue to step 7.m. Document all cycles in [Data Sheet 10: Cycling – Private Use Lifts](#).
- m. Document evidence of separation, fracture, or breakage of any vehicle or lift component. If any vehicle or lift component separates, fractures, or breaks, stop the test, photograph the evidence, and note failure in [Data Sheet 10: Fatigue Endurance – Private Use Lifts](#).
- n. End the continuous recording of platform velocity.

13.11 STATIC LOAD TEST II—PROOF LOAD

- 1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
- 2. Place the platform at the vehicle floor level loading position.
- 3. Disengage the outer barrier to allow for easier loading access.
- 4. Center three times the standard load, including the test pallet, on the platform surface. Document results in [Data Sheet 11: Static Load Test II – Proof Load](#).

Note: For private use lifts the standard load is either 400 lbs or the lift manufacturer's rated load (whichever is greater).

- 5. Start the continuous recording of platform velocity. Document results in [Data Sheet 11: Static Load Test II – Proof Load](#).
- 6. Fully place the pallet on the platform within 1 minute of beginning to place it.
- 7. Photograph the proof load on the platform.
- 8. Two minutes after fully placing the loaded test pallet on the platform surface, remove the loaded test pallet and examine the platform lift and vehicle for separation, fracture or breakage. If the platform lift or vehicle has evidence of separation, fracture, or breakage; photograph the evidence, a test failure has occurred. Document results in [Data Sheet 11: Static Load Test II – Proof Load](#).

13. COMPLIANCE TEST EXECUTION....Continued

9. End the continuous recording of platform velocity.
10. Verify that after the proof load test, the lift will pass the Static Load Test I. Note failures and document in [Data Sheet 11: Static Load Test II – Proof Load](#). Do so by following these steps and record the results in [Data Sheet 11: Proof Load – Maximum Lift Velocity, Acceleration, and Noise](#):
 - a. Stow the platform.
 - b. Deploy the platform to vehicle level
 - c. Lower the platform to ground level
 - d. Raise the platform to vehicle level
11. Digitally record steps 4 – 10.

13.12 HANDRAIL TEST

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Photograph the handrails and/or armrest.

NOTE: [Figure 12](#) illustrates the handrail requirements. *Public use lifts **MUST** have a handrail present on each side of the lift platform meeting the requirements tested below. Private use lifts, if so equipped, **MUST** have handrails meeting the requirements tested below:*

3. Use the handrail diagram ([Figure 13](#)) to help with the measurements for steps 3.a – 3.d.
 - a. Measure the height of the graspable portion of the handrail vertically from the platform surface (H). Record measurement in [Data Sheet 12: Handrail Measurement](#). If the vertical measurement is less than 760 mm (30 inches) or more than 965 mm (38 inches) above the platform surface, a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Requirement](#).
 - b. Measure the cross section of the graspable portion of the handrail (A). Record measurement in [Data Sheet 12: Handrail Measurement](#). If the cross section is less than 31.5 mm (1.25 inches) or more than 38 mm (1.5 inches) in diameter or width, a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Requirement](#).

13. COMPLIANCE TEST EXECUTION....Continued

- c. Measure the radii on any corner (R). Record the measurement in [Data Sheet 12: Handrail Measurement](#). If the radii of any corner is less than 3.2 mm (0.125 inches), a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Requirement](#).
 - d. Measure the horizontal extent of the graspable portion of the handrails (L). The graspable portion must fall between two parallel planes 8" apart. Record the measurement in [Data Sheet 12: Handrail Measurement](#). If the horizontal extent of the handrail is less than 203 mm (8 inches) apart, a test failure has occurred. Record the test failure in [Data Sheet 12: Handrail Requirement](#).
4. Raise and lower the lift platform and verify the position of the handrails relative to the platform does not change. If the handrail position changes relative to the platform surface, a test failure has occurred. Digitally capture the position change, and note failure in [Data Sheet 12: Handrail Requirement](#).
 5. Select an area of 1290 mm² (2 in²) near the radii point on the handrail. Mark this area on the handrail. Using the hand held force gauge and 100 lb load cell apply 4.4 N (1 lbf) upwards to remove any looseness or slack from the handrail structure.
 6. Mark a reference point anywhere on the handrail. Measure the location of the handrail at the 4.4 N (1 lbf) load application point in reference to the platform surface. Photograph and record reference point location in [Data Sheet 12: Handrail Force Test](#).

NOTE: Use of dial indicators, or other precision equipment is necessary to measure displacement of the handrail reference point during the force application.

7. Remove the 4.4 N load.
8. Digitally record the 100 lb and 250 lb handrail tests.
9. Gently lower the 100 lb lead block onto the same 1290 mm² (2 in²) area in the opposite direction of the 4.4 N slack adjustment.
10. Attain the force within 1 minute after beginning to apply it.
11. Record the applied force in [Data Sheet 12: Handrail Force Test](#). Photograph the area location and force application and note the position in [Data Sheet 12: Handrail Force Test](#).
12. Five seconds after attaining the force:

13. COMPLIANCE TEST EXECUTION....Continued

- a. Measure the amount of displacement of the handrail relative to the reference point. Record the displacement in [Data Sheet 12: Handrail Force Test](#). If the displacement exceeds 25 mm (1 inch), a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Force Requirement](#).
 - b. Measure the minimum horizontal distance between the outside of the handrail and the nearest portion of the vehicle if so installed. Record the distance in [Data Sheet 12: Handrail Force Test](#). If the clearance between each handrail and the nearest portion of the vehicle is less than 38 mm (1.5 inches) a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Force Requirement](#).
13. Remove the 445 N (100 lbf) lead block. Reapply the 4.4 N (1 lbf) in the direction and location that it was first applied.
 14. Five seconds after attaining the force, measure the position of the handrail with respect to the reference point to determine if there is any permanent deformation of the handrail relative to the platform. If the reference point location has changed by more than 2 mm (0.078 inches), permanent deformation is evident, and a test failure has occurred. Photograph the permanent deformation, and note in [Data Sheet 12: Handrail Force Requirement](#).
 15. On the same handrail, gently lower the 1,112 N (250 lbf) lead block onto the same 1290 mm² (2 in²) area in the opposite direction of the 4.4 N slack adjustment.
 16. Attain the force within 1 minute after beginning to apply it.
 17. Five seconds after attaining the force, measure the amount of displacement of the handrail relative to the reference point. Record the displacement in [Data Sheet 12: Handrail Force Test](#). If the displacement exceeds 100 mm (4 inches), a test failure has occurred. Note the failure in [Data Sheet 12: Handrail Force Requirement](#).
 18. Remove the 1,112 N (250 lbf) lead block. Reapply the 4.4 N (1 lbf) in the direction and location that it was first applied.
 19. Five seconds after attaining the force, measure the position of the handrail with respect to the reference point to determine if there is any permanent deformation of the handrail relative to the platform. If the reference point location has changed by more than 2 mm (0.078 inches), permanent deformation is evident, and a test failure has occurred. Photograph the permanent deformation, and note in [Data Sheet 12: Handrail Force Requirement](#).
 20. Maintain the force for two minutes.

13. COMPLIANCE TEST EXECUTION....Continued

21. Release and inspect the handrail for cracking, separations or fractures and record any findings in [Data Sheet 12: Handrail Force Requirement](#). Any evidence of cracking, separation, or fractures is a test failure.

13.13 WHEELCHAIR RETENTION DEVICE OVERLOAD TEST

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. Position the platform surface 90 mm +/- 10 mm (3.5 +/- 0.4 inches) above the ground level loading position. Or until the outer barrier or any part of the platform is not touching the ground.
3. *Wheelchair Retention Device: Outer Barrier*
 - a. Connect the force application device to a 2000 lb load cell that is attached to a jack.
 - b. Place the force application device on the platform. The device should have a 25 mm (1 inch) cross bar that spans the width of the entire outer barrier.
 - c. Line up the device so that it is centered on the platform and the 25 mm (1 inch) cross bar is at a height of 64 mm (2.5 inches) above the platform reference plane ([Figure 1](#)).
 - d. Secure it through the grating of the platform with bolts, nuts, zip ties, etc.
 - e. Photograph the pre-test set-up and post-test results and digitally record the force application.

NOTE: If the bottom edge of the outer barrier falls 50 mm (2 inches) or more above the platform reference plane, distribute the force about an axis 13 mm (0.5 inches) above the bottom edge of the barrier.

- f. Apply 7,117 N (1,600 lbf) to the outer barrier. Make sure the force is in a direction parallel to both the platform lift and platform reference planes ([Figure 1](#)).
- g. Attain the force within 1 minute after beginning to apply it.
- h. After maintaining the force for two minutes, remove it and examine the wheelchair retention device for separation, fracture or breakage. Note in [Data Sheet 13: Wheelchair Retention – Outer Barrier](#).

13. COMPLIANCE TEST EXECUTION....Continued

4. *Wheelchair Retention Device: Non-Outer Barrier*

- a. Place the test device on the lift platform with its plane of symmetry coincident with the lift reference plane ([Figure 1](#)), and in the direction of travel of a wheelchair on the lift when exiting.
- b. Fit or apply a means of determining contact with the wheelchair retention device to the test device.
- c. Move the test device forward until it contacts the wheelchair retention device.
- d. Remove the test device from the platform.
- e. Apply 7,117 N (1,600 lbf) to the wheelchair retention device in a direction parallel to both the platform lift and platform reference planes ([Figure 1](#)), distributed evenly at all areas of the wheelchair retention device that made contact with the test device when it was moved forward.
- f. Attain the force within 1 minute after beginning to apply it.
- g. After maintaining the force for two minutes, remove it and examine the wheelchair retention device for separation, fracture or breakage. Note any failures in [Data Sheet 13: Wheelchair Retention – Non-Outer Barrier](#).

13.14 STATIC LOAD TEST III—ULTIMATE LOAD

1. Secure the lift in a suitable test fixture, or verify adequate installation on a vehicle if directed by the COTR, per manufacturer instructions, such that it performs its intended function throughout all operations.
2. On a non-contacted surface of the lift platform, orient a data measurement device(s) to continuously record the vertical velocity of the platform throughout the test. The platform may not experience a velocity of greater than 305 mm (12 inches) per second otherwise a test failure has occurred. Photograph and note failures in [Data Sheet 14: Static Load Test III—Ultimate Load](#).
3. Place the platform at the vehicle floor loading position.
4. Disengage the outer barrier to allow for easier loading access.
5. Digitally record steps 6 – 9.

13. COMPLIANCE TEST EXECUTION....Continued

6. Center four times the standard load (Public Lift = 2400 lbs), including the test pallet ([Figure 11](#)) on the platform surface.

NOTE: For private use lifts the standard load is either 400 lbs or the lift manufacturer's rated load (whichever is greater).

7. Fully place the pallet on the platform within 1 minute of beginning to place it.
8. Photograph the ultimate load on the platform.
9. Two minutes after fully placing the loaded test pallet on the platform surface, remove the loaded test pallet and examine the platform lift and vehicle for separation, fracture or breakage. If the platform lift or vehicle has evidence of separation, fracture, or breakage; photograph the evidence, this constitutes a test failure. Note in [Data Sheet 14: Static Load Test III—Ultimate Load](#).

14. POST-TEST REQUIREMENTS

After the required tests are completed, the contractor shall:

- A. Verify all data sheets complete and photographs taken,
- B. Complete the Vehicle Condition report form including a word description of its post test condition,
- C. Copy applicable pages of the vehicle Owner's Manual for attachment to the final test report,
- D. Remove all instrumentation from vehicle. Return vehicle to its pretest condition.
- E. Move the test vehicle to a secure area,
- F. Place all original records in a secure and organized file awaiting test data disposition.

15. REPORTS

15.1. MONTHLY STATUS REPORTS

The contractor is required to submit a monthly Test Status Report and an Equipment Status Report to the COTR. The Equipment Status Report is required to be submitted until all final reports are accepted.

15.2 APPARENT TEST FAILURE

Any indication of a test failure is required to be communicated by telephone to the COTR within 24 hours with written notification mailed within 48 hours (Saturdays and Sundays excluded). A Notice of Test Failure with a copy of the particular compliance test data sheet(s) is required to be included.

15. REPORTS....Continued

In the event of a test failure, a post test calibration check of some critically sensitive test equipment and instrumentation 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.

15.3 FINAL TEST REPORTS

15.3.1 COPIES

In the case of an apparent test failure, seven paper copies and electronic copies in both Word and pdf formats of the Final Test Report shall be submitted to the COTR for acceptance within three weeks of test completion. The Final Test Report format to be used by all contractors can be found in the "Report Section".

Where there has been no indication of an apparent noncompliance, three paper copies and electronic copies in both Word and pdf formats of each Final Test Report shall be submitted to the COTR for acceptance within three 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 one 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.

15.3.2 REQUIREMENTS

The Final Test Report and 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.

15. REPORTS....Continued

15.3.3 First Three Pages

A. FRONT COVER

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

- (1) Final Report Number such as 403-ABC-XX-001, where –
 - 403 is the FMVSS tested
 - ABC are the initials for the laboratory
 - XX is the Fiscal Year of the test program
 - 001 is the Group Number (001 for the 1st brand, 002 for the 2nd brand, etc.)

- (2) Final Report Title And Subtitle such as
 - SAFETY COMPLIANCE TESTING FOR FMVSS 403
 - Platform Lift Systems for Motor Vehicles
 - *****
 - Lift Manufacturer
 - Model XYZ

- (3) Contractor's Name and Address such as
 - COMPLIANCE TESTING LABORATORIES, INC.
 - 4335 West Dearborn Street
 - Detroit, Michigan 48090-1234

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
 NVS-220
 1200 New Jersey Avenue, SE
 Washington, DC 20590

15. REPORTS....Continued**B. FIRST PAGE AFTER FRONT COVER**

When a contract test laboratory is reporting, a disclaimer statement and an acceptance signature block for the COTR shall be provided as follows:

This publication is distributed by the National Highway Traffic Safety Administration in the interest of information exchange. 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.

Prepared By: _____

Approved By: _____ *

Approval Date: _____ *

FINAL REPORT ACCEPTANCE BY OVSC:*

Accepted By: _____

Acceptance Date: _____

* These lines not required when OVSC staff writes the Test Report

15. REPORTS....Continued**C. SECOND PAGE AFTER FRONT COVER**

A completed Technical Report Documentation Page (Form DOT F1700.7) is required to 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

403-ABC-XX-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 403 Compliance Testing of Platform Lift Systems from Lift Manufacturer, Model XYZ

Block 5 — REPORT DATE

Month Day, 20XX

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

15. REPORTS....Continued

Block 9 — PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, MI 48070-1234

Block 10 — WORK UNIT NUMBER

Leave blank

Block 11 — CONTRACT OR GRANT NUMBER

DTNH22-XX-D-12345

Block 12 — SPONSORING AGENCY NAME AND ADDRESS

United States Department of Transportation
National Highway Traffic Safety Administration
Office of Vehicle Safety Compliance
Mail Code: NVS-220
1200 New Jersey Avenue, SE
Washington, DC 20590

Block 13 — TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Month Day to Month Day, 20XX

Block No. 14--SPONSORING AGENCY CODE

NVS-220

Block 15 — SUPPLEMENTARY NOTES

Leave blank

15. REPORTS....Continued

Block 16 — ABSTRACT

Compliance tests were conducted on Platform Lift Systems from [Lift Manufacturer in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-403-0X for the determination of FMVSS 403 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 403

Block 18 — DISTRIBUTION STATEMENT

Copies of this report are available from —

National Highway Traffic Safety Administration
Technical Information Services
Room E12-100 (NPO-411)
1200 New Jersey Avenue, SE
Washington, DC 20590
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Block 19 — SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 — SECURITY CLASSIFICATION OF PAGE

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Add appropriate number

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Leave blank

15. REPORTS....Continued

15.3.4 TABLE OF CONTENTS

Final test report Table of Contents is required to include the following:

- Section 1 — Purpose of Compliance Test
- Section 2 — Test Procedure and Discussion of Results
- Section 3 — Test Data
- Section 4 — Test Equipment List and Calibration Information
- Section 5 — Photographs
- Section 6 — Other Documentation
- Section 7 — Notice of Test Failure (if applicable)
- Appendix A — Photographs

Appendix B —Test Equipment List and Calibration Information

One sample of each Compliance Data Sheet is included in this section. More than one copy of a Data Sheet may be needed for a complete compliance test series. Record test data in standard engineering units, determine compliance, and record PASS, FAIL, NA (not applicable), or SEE REMARKS in the spaces provided. Any noncompliance should be explained under REMARKS.

16. DATA SHEETS

Data Sheet 1: General Requirements

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Platform Lift Type

Platform Lift Type		Lift Type		Pass or Fail
		Public	Private	
S6 (b2)	Are the words on the platform lift's certification label consistent with the requirements of FMVSS 403? (i.e. Does the certification label bear the words: "DOT- Public Use Lift")	Yes or No		
S6 (b2)	Are the words on the platform lift's certification label consistent with the requirements of FMVSS 403? (i.e. Does the certification label bear the words: "DOT- "Private Use Lift")		Yes or No	
	If the lift is installed upon a vehicle, note the GVWR and type of vehicle:			

Vehicle Owner's Manual

Vehicle Owner's Manual			Pass or Fail
S6.12	Does the lift manufacturer provide with the lift, inserts for the vehicle owner's manual that provide specific information about the platform lift?	Yes or No	
S6.12	Is the vehicle owner's manual written in English?	Yes or No	
S6.12.1	Does the owner's manual include a maintenance schedule that has, at a minimum, some dependency on the number of cycles on the operations counter?	Yes or No Page #	
S6.12.2	Are there instructions regarding the platform lift operating procedures, including backup operations?	Yes or No Page #	

16. DATA SHEETS

Public Use Lift Owner’s Manual

Public Use Lift Owner’s Manual			Pass or Fail
S6.12.3.1	Does the owner’s manual include the statement “DOT- Public Use Lift” on the front cover?	Yes or No Page #	
S6.12.3.2	Does the owner’s manual also include that this lift may be installed on vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb)?	Yes or No Page #	

Private Use Lift Owner’s Manual

Private Use Lift Owner’s Manual			Pass or Fail
S6.12.4.1	Does the owner’s manual include dimensions that constitute the unobstructed platform operation volume for the lift?	Yes or No Page # ___ Vol.	
S6.12.4.2	Does the owner’s manual include the manufacturer’s rated load for the lift?	Yes or No Page # ___ Rated Load	
S6.12.4.3	Does the owner’s manual include information on whether a wheelchair user must back onto the platform from the ground level loading position to the absence of an inner roll stop?	Yes or No Page #	
S6.12.4.4	Does the owner’s manual include the statement “DOT- Private Use Lift” on the front cover?	Yes or No Page #	
S6.12.4.5	Does the owner’s manual also include the statement “DOT-Private Use Lift verifies that this platform lift meets only the “private use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, except for buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb)”?	Yes or No Page #	

16. DATA SHEETS

Installation Instructions

Installation Instructions			Pass or Fail
S6.13	Does the manufacturer of the platform lift include installation instructions with each lift?	Yes or No	
S6.13	Are the installation instructions written in English?	Yes or No	
S6.13.1	Do the installation instructions identify the vehicles on which the lift is designed to be installed? (By make, model, and year, or by specifying the design elements that would make a vehicle an appropriate host for a particular lift, and for which the platform lift manufacturer has certified compliance)	Yes or No	
S6.13.2	Are procedures for operational checks that the vehicle manufacturer must perform to verify that the lift is fully operational included?	Yes or No	
S6.13.3	Is there any informational material or labels that must be placed on or in the vehicle in order to comply with the requirements? Verify that the labels must be of a permanent nature.	Yes or No	

Public Use Lift Installation Instructions

Public Use Lift Installation Instructions			Pass or Fail
S6.13.4	Is the statement "DOT-Public Use Lift" on the front cover of the instructions?	Yes or No	
S6.13.4.1	Do the installation instructions contain the statement "Public use vehicle manufacturers are responsible for complying with the lift lighting requirements in Federal Motor Vehicle Safety Standard No. 404, Platform Lift Installations in Motor Vehicles (49 CFR 571.404)"?	Yes or No	

16. DATA SHEETS

Private Use Lift Installation Instructions

Private Use Lift Installation Instructions			Pass or Fail
S6.13.5	Is the statement "DOT-Private Use Lift" on the front cover of the instructions?	Yes or No	
S6.13.5	Does the front cover of the installation instructions include the manufacturer's rated load for the lift?	Yes or No	
S6.13.5	Manufacturer's rated load for lift:	_____ kg	

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 2: Platform Requirements

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Unobstructed Platform Operating Volume

Geometric Center Location

Geometric Center Location		
Platform Geometric Center Location (Measured from inward surface of wheelchair retention device and inner edge guard):	X: _____ mm	Y: _____ mm

Public Use Lift Unobstructed Platform Operating Volume

Public Use Lift Unobstructed Platform Operating Volume		Without Standard Load	Pass or Fail
S6.4.2.1	Is the Unobstructed Volume test fixture contained within the lift platform?	Yes or No	
S6.4.2.1	Verify that the Unobstructed Volume test fixture does not contact any other lift component than the platform during operation.	Yes or No	

Private Use Lift Unobstructed Platform Operating Volume

Private Use Lift Unobstructed Platform Operating Volume		Without Standard Load	Pass or Fail
S6.4.2.2	Is the platform operating volume specified by the lift manufacturer and identified in the lift insert to the vehicle owner's manual?	Yes or No Page #	
S6.4.2.2	Specified Volume:	L: _____ mm W: _____ mm H: _____ mm	

16. DATA SHEETS

Platform Surface Protrusions

Public Use Lift Platform Protrusion Height

Public Use Lift Platform Protrusion Height		Without Standard Load	Pass or Fail
S6.4.3.1	Do all platform protrusions have a height of 6.5 mm or less?	Yes or No	
S6.4.3.1	Platform protrusion height (if applicable):		

Private Use Lift Platform Protrusion Height and Slope

Private Use Lift Platform Protrusion Height and Slope		Without Standard Load	Pass or Fail
S6.4.3.2	Do all platform protrusions have a height of 13 mm or less?	Yes or No	
S6.4.3.2	Platform protrusion height (if applicable)		
S6.4.3.2	Do all portions of the sides of a protrusion that are between 6.5 and 13 mm above the platform have a slope greater than 1:2?	Yes or No	

16. DATA SHEETS

Gaps, Transitions, and Openings

Ground Level Loading Position

Ground Level Loading Position		Without Standard Load	With Standard Load	Pass or Fail
S6.4.4.1	Vertical surface transition over which a passenger may traverse to enter or exit the platform:	____ mm	____ mm	
S6.4.4.1	Are all vertical surface transitions less than 6.5 mm?	Yes or No	Yes or No	
S6.4.4.2	Slope between 6.5 mm and 13 mm of surface over which a passenger may traverse to enter or exit the platform:			
S6.4.4.2	Are all slope measurements 1:2 or less on the portion of the rise between 6.5 mm and 13 mm?	Yes or No	Yes or No	
S6.4.4.2	Slope between 13 mm and 75 mm of surface over which a passenger may traverse to enter or exit the platform:			
S6.4.4.2	Are all slope measurements 1:8 or less on the portion of the rise between 13 mm and 75 mm?	Yes or No	Yes or No	
S6.4.4.2	Do all sloped surfaces have a rise of 75 mm or less?	Yes or No	Yes or No	

Verifying Ground Level Gaps and Openings

Verifying Ground Level Gaps and Openings		Without Standard Load	With Standard Load	Pass or Fail
S6.4.4.3	Do all gaps between the inner roll stop and the lift platform prevent passage of the clearance test block?	Yes or No	Yes or No	
S6.4.4.4	Do all horizontal gaps over which a passenger may traverse to enter or exit the platform prevent passage of a 13 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.5	Do all openings in that portion of the platform surface that coincides with the unobstructed platform operating volume prevent passage of a 19 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.6	Do all gaps between the platform sides and edge guards which move with the platform prevent passage of a 13 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.6	Do all horizontal gaps between the platform side and the vehicle structure prevent passage of a 6.5 mm diameter sphere? (If Applicable)	Yes or No	Yes or No	

16. DATA SHEETS

Vehicle Level Loading Position

Vehicle Level Loading Position		Without Standard Load	With Standard Load	Pass or Fail
S6.4.4.1	Vertical surface transition over which a passenger may traverse to enter or exit the platform:	_____ mm	_____ mm	
S6.4.4.1	Are all vertical surface transitions less than 6.5 mm?	Yes or No	Yes or No	
S6.4.4.2	Slope between 6.5 mm and 13 mm of surface over which a passenger may traverse to enter or exit the platform:			
S6.4.4.2	Are all slope measurements 1:2 or less on the portion of the rise between 6.5 mm and 13 mm?	Yes or No	Yes or No	
S6.4.4.2	Slope between 13 mm and 75 mm of surface over which a passenger may traverse to enter or exit the platform:			
S6.4.4.2	Are all slope measurements 1:8 or less on the portion of the rise between 13 mm and 75 mm?	Yes or No	Yes or No	
S6.4.4.2	Do all sloped surfaces have a rise of 75 mm or less?	Yes or No	Yes or No	

Verifying Vehicle Level Gaps and Openings

Verifying Vehicle Level Gaps and Openings		Without Standard Load	With Standard Load	Pass or Fail
S6.4.4.3	Do all gaps between the outer barrier and the lift platform prevent passage of the clearance test block?	Yes or No	Yes or No	
S6.4.4.4	Do all horizontal gaps over which a passenger may traverse to enter or exit the platform prevent passage of a 13 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.5	Do all openings in that portion of the platform surface that coincides with the unobstructed platform operating volume prevent passage of a 19 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.6	Do all gaps between the platform sides and edge guards which move with the platform prevent passage of a 13 mm diameter sphere?	Yes or No	Yes or No	
S6.4.4.6	Do all horizontal gaps between the platform side and the vehicle structure prevent passage of a 6.5 mm diameter sphere? (If Applicable)	Yes or No	Yes or No	

16. DATA SHEETS

Platform Deflections

Note: For platform deflections use a calibrated inclinometer to help with the measurements.

Inclinometer Make/Model/Serial Number: _____

Inclinometer Calibration Date: _____

Platform Deflections with and without Load

Platform Deflection with and without Load			Pass or Fail
S6.4.5	Inclinometer angle on UNLOADED lift platform:	____ °	
S6.4.5	Inclinometer angle on LOADED lift platform:	____ °	
S6.4.5	Inclinometer angle on vehicle floor or test fixture:		
S6.4.5	Difference angle (ABSOLUTE (Vehicle Floor Angle) – ABSOLUTE (LOADED Lift Platform Angle) =	____ °	
S6.4.5	Is the difference angle between the Loaded Platform and Vehicle Floor 4.8° or less?	Yes or No	
S6.4.5	Difference angle (ABSOLUTE (UNLOADED Lift Platform Angle) – ABSOLUTE (LOADED Lift Platform Angle) =	____ °	
S6.4.5	Is the difference angle 3° or less?	Yes or No	

16. DATA SHEETS

Edge Guards

Edge Guards

Edge Guards			Pass or Fail
S6.4.6.1	Are all edge guards continuous and parallel with the direction of wheelchair movement during loading and unloading?	Yes or No	
S6.4.6.1	Horizontal distance between end of platform and closest parallel face of an edge guard at ground level:	_____ mm	
S6.4.6.1	Is the horizontal distance 75 mm or less?	Yes or No	
S6.4.6.1	Horizontal distance between end of platform and closest parallel face of an edge guard at vehicle level:	_____ mm	
S6.4.6.1	Is the horizontal distance 75 mm or less?	Yes or No	
S6.4.6.2	Does the Edge Guard have a minimum height of 38 mm?	Yes or No	
S6.4.6.2	Edge Guard Height:	Min: __mm Max: __mm	
S6.4.6.3	Vertical distance from the ground to the platform surface at edge guard release (if applicable):	_____ mm	
S6.4.6.3	Is the vertical distance 75 mm or less?	Yes or No	

16. DATA SHEETS

Edge Guards – Alternative Test

Edge Guards – Alternative Test

Edge Guards – Alternative Test			Pass or Fail
Side-to-Side	Position of lift platform surface above ground:	_____ mm	
Side-to-Side	Do the Edge Guards prevent the wheelchair test device from rolling off the edge of the platform?	Yes or No	
Side-to-Side	Does the wheelchair test device remain upright with all of its wheels on the platform surface?	Yes or No	
Corner-to-Corner	Position of lift platform surface above ground:	_____ mm	
Corner-to-Corner	Do the Edge Guards prevent the wheelchair test device from rolling off the edge of the platform?	Yes or No	
Corner-to-Corner	Does the wheelchair test device remain upright with all of its wheels on the platform surface?	Yes or No	

Platform Markings on Public Use Lifts

Note: For platform markings use a calibrated light meter to help with the measurements.

Light meter Make/Model/Serial Number: _____

Light meter Calibration Date: _____

NOTE: Luminance measurements are recorded with the lift in an environment where there is no apparent ambient light, with the sensor portion of the light meter within 50 mm (2 inches) of the surface being measured and with a light meter that has a range comparable to a minimum of 0 to 100 Lux in increments comparable to 1 Lux or less, an accuracy of ± 5 % of the actual reading and a sampling rate of at least 2 Hz.”

16. DATA SHEETS

Public Use Lift Platform Markings

Public Use Lift Platform Markings			Pass or Fail
S6.4.10	Are all edges of the platform surface, the visible edge of the vehicle floor or bridging device adjacent to the platform lift and any designated standing area outlined?	Yes or No	
S6.4.10	Are all outlines at least 25 mm wide?	Yes or No	
S6.4.10	Minimum outline width of marked lift and vehicle edges, and any designated operator standing area:	_____ mm	
Luminance contrast of outlines and background colors:			
S6.4.10	Luminance of lighter color: L1=	_____ Lux (lm/m ²)	
S6.4.10	Luminance of darker color: L2=	_____ Lux (lm/m ²)	
S6.4.10	Contrast = 100 x [(L1 – L2)/L1]: FOR LIFTS WITH LIGHTING EQUIPMENT INSTALLED ONLY	_____ %	
S6.4.10	Are the outlines of a color that contrasts with its background by at least 60%	Yes or No	

16. DATA SHEETS

Public Use Lift Platform Markings: Lighting Equipment

Public Use Lift Platform Markings: Lighting Equipment			
For Public Use Lifts with Lighting Equipment Installed Only:			
At the vehicle floor level	Platform Lighting Luminance Test for each of the nine (9) points illustrated in Figure 16 .		Is the luminance less than 22 Lux
	Point 1: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 2: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 3: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 4: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 5: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 6: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 7: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 8: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 9: L1 =	_____ Lux (lm/ m ²)	Yes or No
At the ground level loading position	Platform Lighting Luminance Test for each of the nine (9) points illustrated in Figure 16 .		Is the luminance less than 11 Lux (lm/m ²)?
	Point 1: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 2: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 3: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 4: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 5: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 6: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 7: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 8: L1 =	_____ Lux (lm/ m ²)	Yes or No
	Point 9: L1 =	_____ Lux (lm/ m ²)	Yes or No

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 3: Interlock Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Lifts Installed upon a Vehicle: S7.9 Test to determine occupancy of inner roll stop and interlock function

Inner Roll Stop: S7.6 Test to determine occupancy of inner roll stop and interlock function

Lifts Installed upon a Vehicle

Lifts Installed upon a Vehicle			Pass or Fail
S6.10.2.1	Is the lift immobilized while the vehicle transmission is in any forward or reverse gear?	Yes or No	
	If "Yes", which forward or reverse gear is required?	Describe	
S6.10.2.2	Does the vehicle move, or is it capable of moving unrestrained, with the lift deployed to the vehicle floor loading position?	Yes or No	

16. DATA SHEETS

Inner Roll Stop

Inner Roll Stop			Pass or Fail
S6.10.2.3	Does the lift stow with the Rigid Box for Detecting Platform Occupancy test device upon the platform?	Yes or No	
	Does the placement location of the Rigid Box have different effects?	Yes or No; Describe	
S6.10.2.4	Location at which the inner roll stop starts to deploy:	____mm	
S6.10.2.4	Location at which the inner roll stop is completely deployed:	____mm	
S6.10.2.4	Does the platform continue to move up or down without the inner roll stop fully deployed?	Yes or No	
S6.10.2.7	Does the inner roll stop start to deploy with 1 front wheel of the wheelchair test device placed on it?	Yes or No	
S6.10.2.4	Does the platform cease motion where it is designed to have the inner rolls top completely deployed?	Yes or No	
S6.10.2.7	Change of vertical distance the wheelchair front wheel has moved after inner roll-stop deployment has stopped:	____mm	
S6.10.2.7	Is the vertical distance greater than 13 mm?	Yes or No	

16. DATA SHEETS

Outer Barrier Interlocks: S7.5 Test to determine occupancy of outer barrier and interlock function

Outer Barrier Interlocks

Outer Barrier Interlocks			Pass or Fail
S6.10.2.5	Vertical distance at which the outer barrier starts to deploy with the wheelchair test device fully placed on the platform:	_____ mm	
S6.10.2.5	Is the vertical distance greater than 75 mm?	Yes or No	
S6.10.2.5	Vertical distance at which the outer barrier is fully deployed with the wheelchair test device fully	_____ mm	
S6.10.2.6	Vertical distance from ground to the bottom of the wheelchair test device wheel(s) occupying the	_____ mm	
S6.10.2.6	Change in vertical distance:	_____ mm	
S6.10.2.6	Is the vertical distance greater than 13 mm?	Yes or No	

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 4: Slip Resistance Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Slip Resistance Test

Note: For slip resistance test use a calibrated force gauge to help with the measurements.

Force Gauge Make/Model/Serial Number: _____

Force Gauge Calibration Date: _____

Note: Brand of waterproof silicon carbide paper: _____

Brand of ammonia hydroxide solution: _____

Platform Slip Resistance

Platform Slip Resistance PULL TEST			
Average Pull Force:	Force Recording Frequency: ≥ 10 Hz	Pull Rate: 18-22mm/s	Pull Time: ≥ 13 seconds
F1 = ____ N	<u>10</u> Hz	____ mm/s	____ s
F2 = ____ N	<u>10</u> Hz	____ mm/s	____ s
F3 = ____ N	<u>10</u> Hz	____ mm/s	____ s
F4 = ____ N	<u>10</u> Hz	____ mm/s	____ s
F5 = ____ N	<u>10</u> Hz	____ mm/s	____ s
N = 5 (number of test sequence iterations) Fb = M*g = ____ N			

16. DATA SHEETS

Coefficient of Friction Calculation

Coefficient of Friction Calculation			Pass or Fail
S6.4.12	Coefficient of Friction:		
S6.4.12	Is the coefficient of friction in any direction of any part of the wet platform surface less than 0.65?	Yes or No	

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 5: Environmental Resistance Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Environment Resistance

Note: For environmental resistance test use a calibrated corrosion chamber to help with the measurements.

Corrosion Chamber Make/Model/Serial Number: _____

Corrosion Chamber Calibration Date: _____

Environmental Resistance

Environmental Resistance			Pass or Fail
S6.3.1	Is the lift designed to be completely within the occupant compartment when stowed?	Yes or No	
S6.3.1	Is the lift attachment hardware protected against corrosion by an electrodeposited coating of nickel, or copper and nickel with at least a service condition number of SCI, in accordance with ASTM B456-95, and is not racked for electroplating in locations subjected to maximum stress?	Yes or No	

16. DATA SHEETS

Lift Attachment Hardware Salt Spray Test

Lift Attachment Hardware Salt Spray Test	
Angle of supported or suspended lift attachment hardware (15-30 degrees):	_____ deg
Compressed Air pressure (69 -172 kN/m ²):	_____ KN/m ²
S7.3 Environmental Resistance Test after 24 hours	Actual Exposure
First Exposure Period (Min. 24 hours):	___ hours
pH Range of Mixture (6.5 to 7.2):	
First Drying Period (1 hour):	_____ hour
Second Drying Period (Min. 24 hours):	_____ hour
Second Exposure Period (Min. 24 hours):	_____ hours
pH Range of Mixture (6.5 to 7.2):	
Third Drying Period (1 hour):	_____ hour
Fourth Drying Period (Min. 24 hours):	_____ hour

Salt Spray Test following a Drying Period

Salt Spray Test following a Drying Period			Pass or Fail
S6.3.1	Is ferrous corrosion evident following a visual examination after the second drying time?	Yes or No	
S6.3.1	Is ferrous corrosion evident on significant surfaces as tested using a 20 mm diameter sphere after the second drying time?	Yes or No	
S6.3.1	Is ferrous corrosion evident following a visual examination after the fourth drying time?	Yes or No or N/A	
S6.3.1	Is ferrous corrosion evident on significant surfaces as tested using a 20 mm diameter sphere after the fourth drying time?	Yes or No or N/A	
S6.3.1	Does the lift maintain continuing function of the all performance aspects of the lift and associated attachment hardware at the conclusion of the salt spray test?	Yes or No	

16. DATA SHEETS

Externally Mounted Lift and Attachment Salt Spray Test

Externally Mounted Lift and Attachment Salt Spray Test	
Angle of supported or suspended lift attachment hardware (45 degrees):	_____ deg
Compressed Air pressure (69 -172 kN/m2):	_____ KN/m ²
S7.3 Environmental Resistance Test after 24 hours	Actual Exposure
First Exposure Period (Min. 24 hours):	___ hours
pH Range of Mixture (6.5 to 7.2):	
First Drying Period (1 hour):	_____ hour
Second Drying Period (Min. 24 hours):	_____ hour

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS**Data Sheet 6: Threshold Warning Signal Test**

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
Date of Manufacture: _____ S/N _____
Lift Make/Model: _____

Threshold Warning Signal Test

Note: For threshold warning signal luminance tests use a calibrated light meter to help with the measurements.

Light meter Make/Model/Serial Number: _____

Light meter Calibration Date: _____

Note: For threshold warning signal audible alarm tests use a calibrated sound level meter to help with the measurements.

Sound Level Meter Make/Model/Serial Number: _____

Sound Level Meter Calibration Date: _____

16. DATA SHEETS

Public Use Lift Platform Threshold Warning Signal

Public Use Lift Platform Threshold Warning Signal			Pass or Fail
S6.1.3	Does a visual and audible warning activate if a portion of a passenger's body or mobility aid is on the platform threshold area?	Yes or No	
S6.1.3	Vertical distance between the platform and the platform threshold area at alarm activation:	____ mm	
S6.1.3	Is the vertical distance greater than 25 mm?	Yes or No	
S6.1.4	Is the intensity of the Flashing Red Beacon greater than 20 candelas?	Yes or No; ____	
S6.1.4	Flashing Red Beacon Frequency:	____ Hz	
S6.1.4	Is the frequency of the Flashing Red Beacon between 1 and 2 Hz?	Yes or No	
S6.1.4	Is the Flashing Red beacon visible at an inclusive angle of 238 degrees?	Yes or No	
S6.1.5	Is the audible alarm frequency between 500 and 3000 Hz?	Yes or No	
S6.1.5	Audible alarm intensity:	____ dBA	
S6.1.5	Is the audible alarm intensity greater than 85 dBA?	Yes or No	

16. DATA SHEETS

Private Use Lift Platform Threshold Warning Signal

Private Use Lift Platform Threshold Warning Signal			Pass or Fail
S6.1.3	Does a visual and/or audible warning activate if a portion of a passenger's body or mobility aid is on the platform threshold area?	Yes or No	
S6.1.2	Which warning is activated?	Visual or Audible or Both	
S6.1.3	Vertical distance between the platform and the platform threshold area at alarm activation:	____ mm	
S6.1.3	Is the vertical distance greater than 25 mm?	Yes or No	
S6.1.4	Is the intensity of the Flashing Red Beacon greater than 20 candelas?	Yes or No; ____ candela	
S6.1.4	Flashing Red Beacon Frequency:	____ Hz	
S6.1.4	Is the frequency of the Flashing Red Beacon between 1 and 2 Hz?	Yes or No; ____ Hz	
S6.1.4	Is the Flashing Red beacon visible at an inclusive angle of 238 degrees?	Yes or No	
S6.1.5	Is the audible alarm frequency between 500 and 3000 Hz?	Yes or No	
S6.1.5	Audible alarm intensity:	____ dBA	
S6.1.5	Is the audible alarm intensity greater than 85 dBA?	Yes or No	

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 7: Wheelchair Retention Device Impact Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Direction of Wheelchair Movement onto the Platform

Direction of Wheelchair Movement onto the Platform			Pass or Fail
S6.4.7.1	Is the platform lift designed so that the platform loading takes place wholly over the vehicle floor?	Yes or No	
S7.7.2	Do the operating directions specify a required direction wheelchair movement onto the platform?	Yes or No	
S7.7.2	Indicated wheelchair direction:	Rearward, Forward, N/A	
S7.7.3	Is the lift a rotary platform lift?	Yes or No	
S7.7.3.1 & S7.7.3.2	Is the Rotary Platform Lift Public or Private?	Public or Private	
For Rotary Platform Lifts Only:			
S7.7.3.2	Do the operating directions specify a required direction wheelchair movement onto the platform? Indicated wheelchair direction:	Rearward, Forward, N/A	

16. DATA SHEETS

Wheelchair Specifications

Wheelchair Specifications	
Wheelchair Test Device Brand	
Model	
Rear Wheel Diameter	____ mm
Front Wheel Diameter	____ mm
Wheelbase	____ mm
Mass	____ kg
CGx (from rear axle)	____ mm
CGy (from ground)	____ mm
Wheelchair Retention Device Type	Outer Barrier or Other
Height of Outer Barrier (from Platform Surface)	____ mm
Footrest Adjustment Height (Perpendicular to Platform Surface)	____ mm

16. DATA SHEETS

Forward Outward Barrier Impact

Forward Impact Test: Speed Trials

Forward Impact Test: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

16. DATA SHEETS

Forward Impact Velocity Test

Forward Impact Velocity Test		Pass or Fail
Impact Test Distance (from deployed wheelchair retention device to front point of footrest):	_____ mm	
Forward Impact Test Speed (2.0 – 2.1 m/s)	_____ m/s	
S6.4.7.1	Does the wheelchair test device remain on the platform surface?	Yes or No
	Does the wheelchair test device remain upright?	Yes or No
	Does the wheelchair test device have all 4 wheels of on the platform?	Yes or No
Description of Wheelchair test device after motion has ceased:		
Description of lift platform during transition to the ground level loading position.		
Footrest Condition:		
Footrests Replaced:	Yes or No	

16. DATA SHEETSRearward Outward Barrier Impact**Rearward Impact Test: Speed Trials**

Rearward Impact Test: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

16. DATA SHEETS

Rearward Impact Velocity Test

Rearward Impact Velocity Test		Pass or Fail
Impact Test Distance (from deployed wheelchair retention device to front point of footrest):	_____ mm	
Rearward Impact Test Speed (1.75 – 1.85 m/s)	_____ m/s	
S6.4.7.1	Does the wheelchair test device remain on the platform surface?	Yes or No
	Does the wheelchair test device remain upright?	Yes or No
	Does the wheelchair test device have all 4 wheels of on the platform?	Yes or No
Description of Wheelchair test device after motion has ceased:		
Description of lift platform during transition to the ground level loading position.		
Footrest Condition:		
Footrests Replaced:	Yes or No	

16. DATA SHEETS

Rotary Platform Lifts

Rotary Platform Lifts Footrest Adjustment

Rotary Platform Lifts Footrest Adjustment			Pass or Fail
S7.7.3.3	Shortest Footrest Adjustment Height (Perpendicular to Platform Surface):	_____ mm	
For Forward Impact Only:			
S7.7.3.4	Position of platform surface above the ground level position (80 – 100 mm)	_____ mm	
S7.7.3.7	Forward Impact Test Speed (2.0 – 2.1 m/s)	_____ m/s	
S7.7.3.7	Does the wheelchair test device remain upright with all of its wheels on the platform surface throughout its range of passenger operation?	Yes or No	
S7.7.3.7	Replacement of Footrests?	Yes or No	
For Rearward Impact Only:			
S7.7.3.4	Position of platform surface above the ground level position (80 – 100 mm)	_____ mm	
S7.7.3.7	Rearward Impact Test Speed (1.75 – 1.85 m/s)	_____ m/s	
S7.7.3.7	Does the wheelchair test device remain upright with all of its wheels on the platform surface throughout its range of passenger operation?	Yes or No	
S7.7.3.7	Replacement of Footrests?	Yes or No	

16. DATA SHEETS

Rotary Platform Forward: Speed Trials

Rotary Platform Forward: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

Rotary Platform Rearward: Speed Trials

Rotary Platform Rearward: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

16. DATA SHEETS

Wheelchair Retention Deployment

Wheelchair Retention Deployment

Wheelchair Retention Deployment			Pass or Fail
S6.4.7.4	Distance between the ground and the lowest part of the platform surface:	mm	
S6.4.7.4	Does the wheelchair retention device stay in the deployed position throughout the range of passenger operation above 75mm?	Yes or No	

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 8: Inner Roll Stop Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Private Use Lift Inner Roll Stop Forward Impact

Private Use Lift Inner Roll Stop

Private Use Lift Inner Roll Stop			Pass or Fail
Private Use Lifts must satisfy either S6.4.8.2(a) or S6.4.8.2(b).			
S6.4.8.2(a)	Does the lift have an inner roll stop?	Yes or No	
S6.4.8.2(b)	Does the lift have operating instructions near the lift controls and in the vehicle owner's manual?	Yes or No	
S6.4.8.2(b)	Do the instructions contain a warning that the wheelchairs should back onto the platform when entering from the ground?	Yes or No	

16. DATA SHEETS

Public Use Lift Inner Roll Stop Forward Impact

Wheelchair Specifications

Wheelchair Specifications	
Wheelchair Test Device Brand	
Model	
Rear Wheel Diameter	_____ mm
Front Wheel Diameter	_____ mm
Wheelbase	_____ mm
Mass	_____ kg
CGx (from rear axle)	_____ mm
CGy (from ground)	_____ mm
Wheelchair Retention Device Type	Outer Barrier or Other
Height of Outer Barrier (from Platform Surface)	_____ mm
Footrest Adjustment Height (Perpendicular to Platform Surface)	_____ mm

Public Use Lift Inner Roll Stop

Public Use Lift Inner Roll Stop	
Height of Inner Roll Stop (from Platform)	_____ mm
Footrest Adjustment Height (at shortest length)	_____ mm

16. DATA SHEETS

Forward Impact Test: Speed Trials

Forward Impact Test: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

Forward Impact Velocity Test

Forward Impact Velocity Test			Pass or Fail
Impact Test Distance (from deployed inner roll stop to forward most element of wheelchair test device):		___ mm	
Forward Impact Test Speed (1.5 – 1.6 m/s)		___ m/s	
S6.4.8.1	Does the lift have an inner roll stop?	Yes or No	
S6.4.8.3(a)	Does the Inner Roll Stop prevent the front wheels of the test device from passing over the edge of the platform where the roll stop is located, when the lift is at ground level loading position?	Yes or No	
S6.4.8.3(a)	Replacement of Footrests?	Yes or No	

16. DATA SHEETS

Public Use Lift Inner Roll Stop Forward Override

Forward Override Test: Speed Trials

Forward Override Test: Speed Trials			
S1:	___ m/s	Distance:	___ m
S2:	___ m/s	Distance:	___ m
S3:	___ m/s	Distance:	___ m
S4:	___ m/s	Distance:	___ m
S5:	___ m/s	Distance:	___ m

Forward Override Velocity Test

Forward Override Velocity Test			Pass or Fail
S6.4.8.3(b)	Forward Impact Test Speed (2.0 – 2.1m/s)	___ m/s	
S6.4.8.3(b)	Does the Inner Roll Stop prevent any portion of the test device from being contacted simultaneously with a portion of the lift platform and any other structure, throughout the lift’s range of passenger operation?	Yes or No	

Remarks:

RECORDED BY: _____
 APPROVED BY: _____

DATE: _____
 DATE: _____

16. DATA SHEETS**Data Sheet 9: Static Load Test I — Working Load**

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
Date of Manufacture: _____ S/N _____
Lift Make/Model: _____

Note: For Static Load Test I use a calibrated accelerometer to help with the measurements.

X Accelerometer Make/Model/Serial Number: _____

X Accelerometer Calibration Date: _____

Z Accelerometer Make/Model/Serial Number: _____

Z Accelerometer Calibration Date: _____

16. DATA SHEETS

Control Systems

Control Systems

Control Systems			Pass or Fail
S6.7.2.1	Is the control that enables and disables the lift system labeled as "Power"?	Yes or No	
S6.7.2.1	Does the control have two labeled states, "On" and "Off"?	Yes or No	
S6.7.2.1	Does the "On" state allow platform lift operation?	Yes or No	
S6.7.2.1	When the Power function is in the "On" state, does an indicator light on the controls illuminate?	Yes or No	
S6.7.2.1	Does the "Off" state prevent lift operation and turn off the indicator light?	Yes or No	
S6.7.2.2	Is the control used to deploy the lift labeled as, Unfold or Deploy? (Exempt if lift manually stows & deploys)	Yes or No; Unfold/Deploy	
S6.7.2.3	Is the control used to lower the lift labeled as, Down or Lower?	Yes or No; Down/Lower	
S6.7.2.4	Is the control used to raise the lift labeled as, Up or Raise?	Yes or No; Up/Raise	
S6.7.2.5	Is the control used to stow the lift labeled, Fold or Stow? (Exempt if lift manually stows & deploys)	Yes or No; Fold/Stow	

16. DATA SHEETS

Character Height Verification

Character Height Verification			Pass or Fail
S6.7.6.1	Are all operating functions identified using characters that are at least 2.5 mm (0.1 inches) in height and is the wording in English?	Yes or No	
S6.7.6.1	Operating Functions	Height of Characters	
S6.7.6.1	Power	_____mm	
S6.7.6.1	On and Off	_____mm	
S6.7.6.1	Deploy or Unfold	_____mm	
S6.7.6.1	Down or Lower	_____mm	
S6.7.6.1	Up or Raise	_____mm	
S6.7.6.1	Stow or Fold	_____mm	

16. DATA SHEETS

Control other than Power

Control other than Power			Pass or Fail
S7.9.1	Does the activation of any other lift control, other than "Power", during lift deployment deploy or stop the lift?	Yes or No	
S7.9.1	Does the activation of any other lift control, other than "Power", during lift lowering lower or stop the lift?	Yes or No	
S7.9.1	Does the activation of any other lift control, other than "Power", during lift raising raise or stop the lift?	Yes or No	
S7.9.1	Does the activation of any other lift control, other than "Power", during lift stowing stow or stop the lift?	Yes or No	

Control System Operation

Control System Operation			Pass or Fail
S6.7.3	Do all operating functions, except the Power function, activate in a momentary fashion, by one switch or by combination of switches?	Yes or No	
S6.7.4	Does the control system prevent simultaneous performance of more than one function?	Yes or No	
S6.7.5	Does any single-point failure in the control system prevent the operation of any of the interlocks?	Yes or No	

16. DATA SHEETS

Identification of Operating Functions and Control Location: Public Use Lifts Only

Controls and Identifiers – Public Lifts Only

Controls and Identifiers – Public Lifts Only			Pass or Fail
S6.7.6.2	Do the characters of the lift control identifiers illuminate when the vehicle’s headlights are illuminated, or power is supplied to the illumination circuit?	Yes or No	
S6.7.7	Are all controls for lift function positioned together, and a person facing the controls has a direct, unobstructed view of the platform lift passenger, and passenger’s mobility aid, if applicable?	Yes or No	

16. DATA SHEETS

Operating Instructions: Public Use Lifts Only

Operating Instructions – Public Lifts Only

Operating Instructions – Public Lifts Only			Pass or Fail
S6.7.8.1	Are all lift operating instructions, including backup operations, located near the controls?	Yes or No	
S6.7.8.2	Are all operating procedures, including backup operations identified using characters that are at least 2.5 mm (0.1 inches) in height?	Yes or No Height: _____mm	
S6.7.8.3	Is the statement “DOT-Public Use Lift” included within the lift operating instructions?	Yes or No	

Operating Instructions: Private Use Lifts Only

Operating Instructions – Private Lifts Only

Operating Instructions – Private Lifts Only			Pass or Fail
S6.7.8.1	Are all lift operating instructions, including backup operations, located near the controls?	Yes or No	
S6.7.8.2	Are all operating procedures, including backup operations identified using characters that are at least 2.5 mm (0.1 inches) in height?	Yes or No Height: _____mm	
S6.7.8.4	Is the statement “DOT-Private Use Lift” included within the lift operating instructions?	Yes or No	
S6.7.8.4	Do the lift operating instructions include the manufacturer’s rated load for the lift and, if applicable, instructions indicating that the wheelchair occupant must back onto the lift when loading from the ground?	Yes or No Rated Load: _____lbs	

16. DATA SHEETS

Backup Operation

Backup Operation: “Off” State

Backup Operation: “Off” State			Pass or Fail
S6.9.1	Is the lift prevented from operating, and power indicator light extinguished when the power is off?	Yes or No	
S6.9.1	Is the lift equipped with a manual backup operating mode that can in the event there is a loss of the primary power source for the lift operation or a lift malfunction do the following: <ul style="list-style-type: none"> - Deploy the lift - Lower the loaded platform to ground level loading position - Raise the unloaded platform to the vehicle floor loading position - Stow the lift 	Yes or No Yes or No Yes or No Yes or No	
S6.9.1	Are the inner roll stop and wheelchair retention device(s) manually deployable through all backup operations?	Yes or No	
S6.9.1	Do the operating instructions near the lift controls and in the vehicle owner’s manual insert contain information on manual backup operation of the following: <ul style="list-style-type: none"> - manual operation of the wheelchair retention device - manual operation of inner roll 	Yes or No Yes or No	

16. DATA SHEETS

Maximum Platform Velocity

Maximum Platform Velocity: Unloaded Lift

Maximum Platform Velocity: Unloaded Lift			
Movement	Time	Horizontal Distance Traveled	Vertical Distance Traveled
Down	_____ s	_____ mm	_____ mm
Up	_____ s	_____ mm	_____ mm
Stow	_____ s	_____ mm	_____ mm
Deploy	_____ s	_____ mm	_____ mm

16. DATA SHEETS

Maximum Platform Velocity: Loaded Lift

Maximum Platform Velocity: Loaded Lift			
Movement	Time	Horizontal Distance Traveled	Vertical Distance Traveled
Down	_____ s	_____ mm	_____ mm
Up	_____ s	_____ mm	_____ mm

Maximum Platform Velocity

Maximum Platform Velocity			
UNLOADED Platform			
	Horizontal Velocity	Vertical Velocity	Pass or Fail
Deploy/Unfold	_____ mm/s	_____ mm/s	
Lower/Down	_____ mm/s	_____ mm/s	
Raise/Up	_____ mm/s	_____ mm/s	
Stow/Fold	_____ mm/s	_____ mm/s	
LOADED Platform			
	Horizontal Velocity	Vertical Velocity	Pass or Fail
Lower/Down	_____ mm/s	_____ mm/s	
Raise/Up	_____ mm/s	_____ mm/s	

16. DATA SHEETS

Maximum Platform Acceleration

Maximum Platform Acceleration

Maximum Platform Acceleration			
UNLOADED Platform			
	Horizontal (X) Acceleration	Vertical (Z) Acceleration	Pass or Fail
Deploy/Unfold			
Lower/Down	_____ g	_____ g	
Raise/Up	_____ g	_____ g	
Stow/Fold			
LOADED Platform			
	Horizontal Acceleration	Vertical Acceleration	Pass or Fail
Lower/Down	_____ g	_____ g	
Raise/Up	_____ g	_____ g	

16. DATA SHEETS

Maximum Noise Level: Public Use Lifts Only

Maximum Noise Level: Public Use Lifts Only

Maximum Noise Level: Public Use Lifts Only		
UNLOADED Platform		
	Noise	Pass or Fail
Deploy/Unfold	_____ dBA	
Lower/Down	_____ dBA	
Raise/Up	_____ dBA	
Stow/Fold	_____ dBA	
LOADED Platform		
	Noise	Pass or Fail
Lower/Down	_____ dBA	
Raise/Up	_____ dBA	

16. DATA SHEETS

Maximum Velocity, Acceleration, and Noise Level

Maximum Velocity, Acceleration, and Noise Level

Maximum Velocity, Acceleration, and Noise Level				
		With Standard Load	Without Standard Load	Pass or Fail
S6.2.2.1	For the "Lower" and "Raise" lift operations, is the velocity less than or equal to 152 mm/s?	Yes or No	Yes or No	
S6.2.2.2*	For the "Deploy" and "Stow" lift operations, is the velocity less than or equal to 305 mm/s?	Yes or No	Yes or No	
S6.2.3	For the "Lower" and "Raise" lift operations, is the acceleration less than or equal to 0.3g (2.94 m/s ²)?	Yes or No	Yes or No	
S6.2.4**	For all PUBLIC LIFT operations, is the noise level less than or equal to 80 dBA	Yes or No	Yes or No	

NOTE: * Platform lifts that manually stow and deploy are exempt from S6.2.2.2.

** There are no noise level requirements for private use lifts.

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 10: Fatigue Endurance Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Fatigue Endurance: Public Use Lifts

Fatigue Endurance: Public Use Lifts

Fatigue Endurance: Public Use Lifts			Pass or Fail
S6.11	Does the platform lift have an operation or cycle counter that records each complete Up/Down (Raise/Lower) operation throughout the range of passenger operation?	Yes or No	
S6.5.1.1	Does the lift remain operable when operated through a total of 15,600cycles (7,800 unloaded Raise/Lower and Stow/Deploy & 7,800 loaded Raise/Lower)?	Yes or No	
S6.5.1.1	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	

NOTE: A Public Lift that manually Stows(Folds) and Deploys(Unfolds) must remain operable when operated through a total of 15,600 cycles: 7,800 **unloaded** Raise/Lower and 7,800 **loaded** Raise/Lower.

16. DATA SHEETS

Cycling: Public Use Lifts

CYCLING: Public Use Lifts			
CYCLING WITH STANDARD LOAD (272.2 kg)			
	Indicated Cycles	Actual Cycles	Dates Performed
1 ST Endurance			
2 nd Endurance			
CYCLING UNLOADED			
	Indicated Cycles	Actual Cycles	Dates Performed
1 ST Endurance			
2 nd Endurance			

Fatigue Endurance: Private Use Lifts

Fatigue Endurance: Private Use Lifts			Pass or Fail
S6.11	Does the platform lift have an operation or cycle counter that records each complete Up/Down (Raise/Lower) operation throughout the range of passenger operation?	Yes or No	
S6.5.1.1	Does the lift remain operable when operated through a total of 4,400 cycles (2,200 unloaded Raise/Lower and Stow/Deploy & 2,200 loaded Raise/Lower)?	Yes or No	
S6.5.1.1	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	

NOTE: A Private Lift that manually Stows(Folds) and Deploys(Unfolds) must remain operable when operated through a total of 4,400 cycles: 2,200 **unloaded** Raise/Lower and 2,200 **loaded** Raise/Lower.

16. DATA SHEETS

Cycling: Private Use Lifts

CYCLING: Private Use Lifts			
CYCLING WITH STANDARD LOAD (181 kg or Manufacture Rated Load)			
	Indicated Cycles	Actual Cycles	Dates Performed
1 ST Endurance			
2 nd Endurance			
CYCLING UNLOADED			
	Indicated Cycles	Actual Cycles	Dates Performed
1 ST Endurance			
2 nd Endurance			

Discussion of Time gaps, or pauses due to cycling, or temperature issues:

Evidence of separation, fracture, or breakage of any vehicle or lift component:

16. DATA SHEETS

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 11: Static Load Test II—Proof Load

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Static Load Test II: Proof Load

Static Load Test II: Proof Load

Static Load Test II: Proof Load			Pass or Fail
S6.5.2	Proof Load:	_____ kg	
S6.5.2	Platform Velocity - Maximum Horizontal Velocity - Maximum Vertical Velocity	_____ mm/s _____ mm/s	
S6.5.2	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	
S6.5.2	After the proof load test, does the lift pass Static Load Test I?	Yes or No	

16. DATA SHEETS

Proof Load: Maximum Lift Velocity, Acceleration, and Noise

Proof Load: Maximum Lift Velocity, Acceleration, and Noise					
UNLOADED Platform					
	Horizontal Velocity	Vertical Velocity	Horizontal (X) Acceleration	Vertical (Z) Acceleration	Noise (Public Use Lift Only)
Deploy/Unfold	_____ mm/s	_____ mm/s			_____ dBA
Lower/Down	_____ mm/s	_____ mm/s	_____ g	_____ g	_____ dBA
Raise/Up	_____ mm/s	_____ mm/s	_____ g	_____ g	_____ dBA
Stow/Fold	_____ mm/s	_____ mm/s			_____ dBA
LOADED Platform					
	Horizontal Velocity	Vertical Velocity	Horizontal Acceleration	Vertical Acceleration	Noise (Public Use Lift Only)
Lower/Down	_____ mm/s	_____ mm/s	_____ g	_____ g	_____ dBA
Raise/Up	_____ mm/s	_____ mm/s	_____ g	_____ g	_____ dBA

Evidence of separation, fracture, or breakage of any vehicle or lift component:

Backup Operation Notes:

16. DATA SHEETS

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS**Data Sheet 12: Handrail Test**

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Note: For Handrail Test use a calibrated force gauge to help with the measurements.

Force Gauge Make/Model/Serial Number: _____

Force Gauge Calibration Date: _____

Handrail Measurement**Handrail Measurement**

Handrail Measurement			
Part	Measurement (mm)	Measurement Requirement	Description of Measurement
H	_____ mm	762 to 965 mm	Vertical graspable portion of the handrail, above the platform surface
A	_____ mm	31.5 to 38 mm	Cross section of graspable portion of handrail
R	_____ mm	> 3.2 mm	Minimum radii of any graspable portion of the handrail
L	_____ mm	> 203 mm	Horizontal extent of graspable portion of handrail

16. DATA SHEETS

Handrail Requirement

Handrail Requirement				
	Part		Yes or No	Pass or Fail
S6.4.9.1		Public Use Lift Only: Is there a handrail located on each side of the lift?	Yes or No	
S6.4.9.2		Private Use Lift Only: Is the lift equipped with handrails?	Yes or No	
S6.4.9.3	H	Is the vertical measurement (H) less than 760 mm or more than 965 mm above the platform surface?	Yes or No	
S6.4.9.4	A	Is the cross section (A) less than 31.5 mm or more than 38 mm?	Yes or No	
S6.4.9.4	R	Is the radii (R) less than 3.2 mm?	Yes or No	
S6.4.9.5	L	Is the vertical projection (horizontal extent of handrail) (L) less than 203 mm apart?	Yes or No	
S6.4.9.6		Does handrail position change relative to the platform surface when the platform is raised and lowered?	Yes or No	

16. DATA SHEETS

Handrail Force Test

Handrail Force Test				
<p><u>Slack Adjustment Point</u> and <u>Handrail Reference Point</u> are measured from the outermost edge of the lift and lift platform reference planes</p>				
	Right or Left Handrail	Force (N)	Distance Relative to Platform Surface	Displacement in Z (mm)
445 N (100 lbf) Test				
S6.4.9.7 & S6.4.9.8	1 st Slack Adjustment (Reference Point 1)	4.4 N	_____ mm	Max Deflection < 25 mm
	1 st Force Application	445 N	_____ mm	_____ mm
	Post Slack Adjustment (Reference Point 1)	4.4 N	_____ mm	_____ mm
1,112 N (250 lbf) Test				
S6.4.9.9	2 nd Slack Adjustment (Reference Point 2)	4.4 N	_____ mm	Max Deflection < 100 mm
	2 nd Load Application	1,112 N	_____ mm	_____ mm
	Post Slack Adjustment (Reference Point 2)	4.4 N	_____ mm	_____ mm

16. DATA SHEETS

Handrail Force Requirement

Handrail Force Requirement			Pass or Fail
S6.4.9.7	Is there more than 25 mm of displacement relative to the platform surface when a force of 445 N is applied?	Yes or No	
S6.4.9.7	After removal of the 445 N load, does the handrail exhibit permanent deformation?	Yes or No	
S6.4.9.8	Is there at least 38 mm of clearance between each handrail and any portion of the vehicle throughout the range of passenger operation?	Yes or No	
S6.4.9.9	Is there more than 100 mm of displacement relative to the platform surface when a force of 1,112 N is applied?	Yes or No	
S6.4.9.9	After removal of the 1,112 N load, does the handrail exhibit permanent deformation?	Yes or No	
S6.4.9.9	Is there any evidence of cracking, separation, or fractures to the handrail?	Yes or No	

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 13: Wheelchair Retention Device Overload Test

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Note: For Wheelchair Retention Device Overload Test use a calibrated force gauge to help with the measurements.

Force Gauge Make/Model/Serial Number: _____

Force Gauge Calibration Date: _____

Wheelchair Retention Device Overload Test

Wheelchair Retention: Outer Barrier

Wheelchair Retention – Outer Barrier			Pass or Fail
S6.4.7.3	Platform Surface Height:	_____ mm	
S6.4.7.3	Applied Load:	_____ N	
S6.4.7.3	Is the deployed wheelchair retention device capable of sustaining 7,117N (1,600lbf)?	Yes or No	
S6.4.7.3	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	

16. DATA SHEETS

Wheelchair Retention: Non-Outer Barrier

Wheelchair Retention – Non-Outer Barrier			Pass or Fail
S6.4.7.3	Platform Surface Height:	_____ mm	
S6.4.7.3	Applied Load:	_____ N	
S6.4.7.3	Is the deployed wheelchair retention device capable of sustaining 7,117N (1,600lbf)?	Yes or No	
S6.4.7.3	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	

Evidence of separation, fracture, or breakage of any vehicle or lift component:

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 14: Static Load Test III—Ultimate Load

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____
 Date of Manufacture: _____ S/N _____
 Lift Make/Model: _____

Static Load Test III – Ultimate Load

Static Load Test III – Ultimate Load

Static Load Test III – Ultimate Load			Pass or Fail
S6.2.2	Is the platform horizontal and vertical velocity less than 305 mm (12 inches) per second?	Yes or No	
S6.5.3	Ultimate Load (4 times Standard load + Test pallet):	____ lbs	
S6.5.3	Is the lift capable of holding four times the standard load?	Yes or No	
S6.2.2	Ultimate load maximum horizontal velocity:	____ mm/s	
S6.2.2	Ultimate load maximum vertical velocity:	____ mm/s	
S6.5.3	Is there any evidence of separation, fracture or breakage on any lift component?	Yes or No	

Evidence of separation, fracture, or breakage of any vehicle or lift component:

16. DATA SHEETS

Failure Notes:

Remarks:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

16. DATA SHEETS

Data Sheet 15: Photographic Documentation

TEST DATE: _____ NHTSA NO.: _____ LABORATORY: _____

Date of Manufacture: _____ S/N _____

Lift Make/Model: _____

1. The lift in the condition it was received (front, rear, and both sides)

YES NO N/A

2. Certification label

YES NO N/A

3. Lift installed in vehicle (if applicable)

YES NO N/A

4. Stowed lift

YES NO N/A

5. Deployed lift

YES NO N/A

6. Vehicle floor level loading position

YES NO N/A

7. Ground level loading position

YES NO N/A

8. Ground level lift

YES NO N/A

9. Vehicle owner's manual insert

9.1. Maintenance schedule

YES NO N/A

9.2. Lift operating procedures

YES NO N/A

Public Use Lifts

9.3. The statement “DOT-Public Use Lift” on the front cover

YES NO N/A

9.4. The statement “*DOT-Public Use Lift* verifies that this platform lift meets the “public use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb).”

YES NO N/A

Private Use Lifts

9.5. The dimensions that constitute the unobstructed platform operating volume for the lift.

YES NO N/A

9.6. The manufacturer’s rated load for the lift.

YES NO N/A

9.7. Information on whether a wheelchair user must back onto the platform from the ground level loading position due to the absence of an inner roll stop.

YES NO N/A

9.8. The statement “DOT-Private Use Lift” on the front cover of the vehicle owner’s manual insert

YES NO N/A

9.9. The statement “*DOT-Private Use Lift* verifies that this platform lift meets only the “private use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, except for buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb).”

YES NO N/A

16. DATA SHEETS**10. Lift Installation Instructions**

- 10.1. The vehicles on which the lift is designed to be installed by make, model, and year, or by specifying the design elements that would make a vehicle an appropriate host for a particular lift, and for which the platform lift manufacturer has certified compliance.

YES NO N/A

- 10.2. Procedures for operational checks that the vehicle manufacturer must perform to verify that the lift is fully operational.

YES NO N/A

- 10.3. Any informational material or labels that must be placed on or in the vehicle in order to comply with the requirements of this standard. Labels must be of a permanent nature that can withstand the elements of the outside environment.

YES NO N/A

Public Use Lifts

- 10.4. The statement "DOT-Public Use Lift" on the front cover of the installation instructions

YES NO N/A

Private Use Lifts

- 10.5. The manufacturer's rated load for the lift.

YES NO N/A

- 10.6. The statement "DOT-Private Use Lift" on the front cover of the installation instructions.

YES NO N/A

S6.4 Platform Requirements**11. Inner Roll-Stop**

YES NO N/A

12. Outer Barrier

YES NO N/A

16. DATA SHEETS

13. Platform Surface

 YES NO N/A

14. Bridgeplate

 YES NO N/A

15. Threshold area

 YES NO N/A

16. Gap between the inner roll stop and the lift platform (w/ Test Fixture).

 YES NO N/A

17. Horizontal gap over which a passenger may traverse to enter or exit the platform (w/ Test Fixture).

 YES NO N/A

18. Unobstructed Volume (w/Test Fixture)

 YES NO N/A

19. Opening in platform surface (w/Test Fixture)

 YES NO N/A

20. Edges of the platform surface

 YES NO N/A

21. Visible edge of the vehicle floor or bridging device adjacent to the platform lift

 YES NO N/A

22. Designated standing area (if applicable)

 YES NO N/A

23. Lift Platform Outline Markings (Public Only)

 YES NO N/A

16. DATA SHEETS

24. Lift light(s) (Public Only)

 YES NO N/A

25. Flashing Red Beacon

 YES NO N/A

26. Gap between the outer barrier and the lift platform (w/Test Fixture)

 YES NO N/A

27. Gap between the platform sides and edge guards (w/Test Fixture)

 YES NO N/A

28. Horizontal gap between the platform side and the vehicle structure (w/Test Fixture) if applicable

 YES NO N/A

29. Edge guards

 YES NO N/A

30. Platform Requirements Test failure(s)

 YES NO N/A**S7.3 Environmental Resistance Test**

31. Test apparatus

 YES NO N/A

32. Lift attachment hardware

 YES NO N/A

33. "Upper" attachment hardware

 YES NO N/A

34. Attachment hardware ferrous corrosion (w/ Test Fixture)

 YES NO N/A

16. DATA SHEETS

35. Assembled externally mounted lift and all associated attachment hardware

YES NO N/A

36. Test device location on the threshold area.

YES NO N/A

37. Environmental Resistance Test failure(s)

YES NO N/A

S7.7 Wheelchair retention device impact test

38. Position of the forward most element of the test device on the platform before forward wheelchair retention impact test

YES NO N/A

39. Position of the test device after forward wheelchair retention impact test

YES NO N/A

40. Position of the rearward most element of the test device on the platform before rearward wheelchair retention impact test

YES NO N/A

41. Position of the test device after rearward wheelchair retention impact test

YES NO N/A

42. Digital video of Wheelchair retention device impact test

YES NO N/A

43. Wheelchair retention device impact test failure(s)

YES NO N/A

S7.8 Inner roll stop test

44. Pre-test footrest position

YES NO N/A

16. DATA SHEETS

45. Position of the forward most element of the test device on the platform before forward inner roll stop impact test

YES NO N/A

46. Position of the test device after inner roll stop impact test

YES NO N/A

47. Digital video of Inner roll stop test

YES NO N/A

48. Inner roll stop test failure(s)

YES NO N/A

S7.9 Static load test I—working load

49. Lift system control (fixed and/or pendant)

YES NO N/A

50. Control panel face(s) including noise level measurement device

YES NO N/A

51. Lift operating instructions

YES NO N/A

52. Digital video of Static load test I—working load

YES NO N/A

53. Static load test I failure(s)

YES NO N/A

S7.10 Fatigue endurance test

54. Test Load on platform

YES NO N/A

55. Lift cycle counter (if visible)

YES NO N/A

16. DATA SHEETS

56. Fatigue endurance test failure(s)

 YES NO N/AS7.11 Static load test II—proof load

57. Test Load on platform

 YES NO N/A

58. Digital video of Static load test II—proof load

 YES NO N/A

59. Static load test II failure(s)

 YES NO N/AS7.12 Handrail test

60. Handrails

 YES NO N/A

61. Digital video of handrail position with raise/lower operation of lift

 YES NO N/A

62. Area location and force application position of first slack take-up load

 YES NO N/A

63. Area location and force application position of first load

 YES NO N/A

64. Digital video of first force application

 YES NO N/A

65. Displacement of handrail (first force application)

 YES NO N/A

66. Clearance to vehicle (if applicable)

 YES NO N/A

16. DATA SHEETS

67. Permanent deformation (if applicable)

 YES NO N/A

68. Area location and force application position of second slack take-up load

 YES NO N/A

69. Area location and force application position of second load

 YES NO N/A

70. Digital video of second force application

 YES NO N/A

71. Displacement of handrail (second force application)

 YES NO N/A

72. Evidence of cracking, separation, or fractures (if applicable)

 YES NO N/A

73. Handrail test failure(s)

 YES NO N/A**S7.13 Wheelchair retention device overload test**

74. Platform above ground level loading position

 YES NO N/A

75. Wheelchair retention device

 YES NO N/A

76. Force application

 YES NO N/A

77. Evidence of cracking, separation, or fractures (if applicable)

 YES NO N/A

16. DATA SHEETS

78. Digital video of Wheelchair retention device overload test

YES NO N/A

S7.14 Static load test III—ultimate load

79. Platform at the vehicle floor loading position

YES NO N/A

80. Load application

YES NO N/A

81. Evidence of cracking, separation, or fractures (if applicable)

YES NO N/A

82. Digital video of Static load test III

YES NO N/A

Remarks:

RECORDED BY: _____

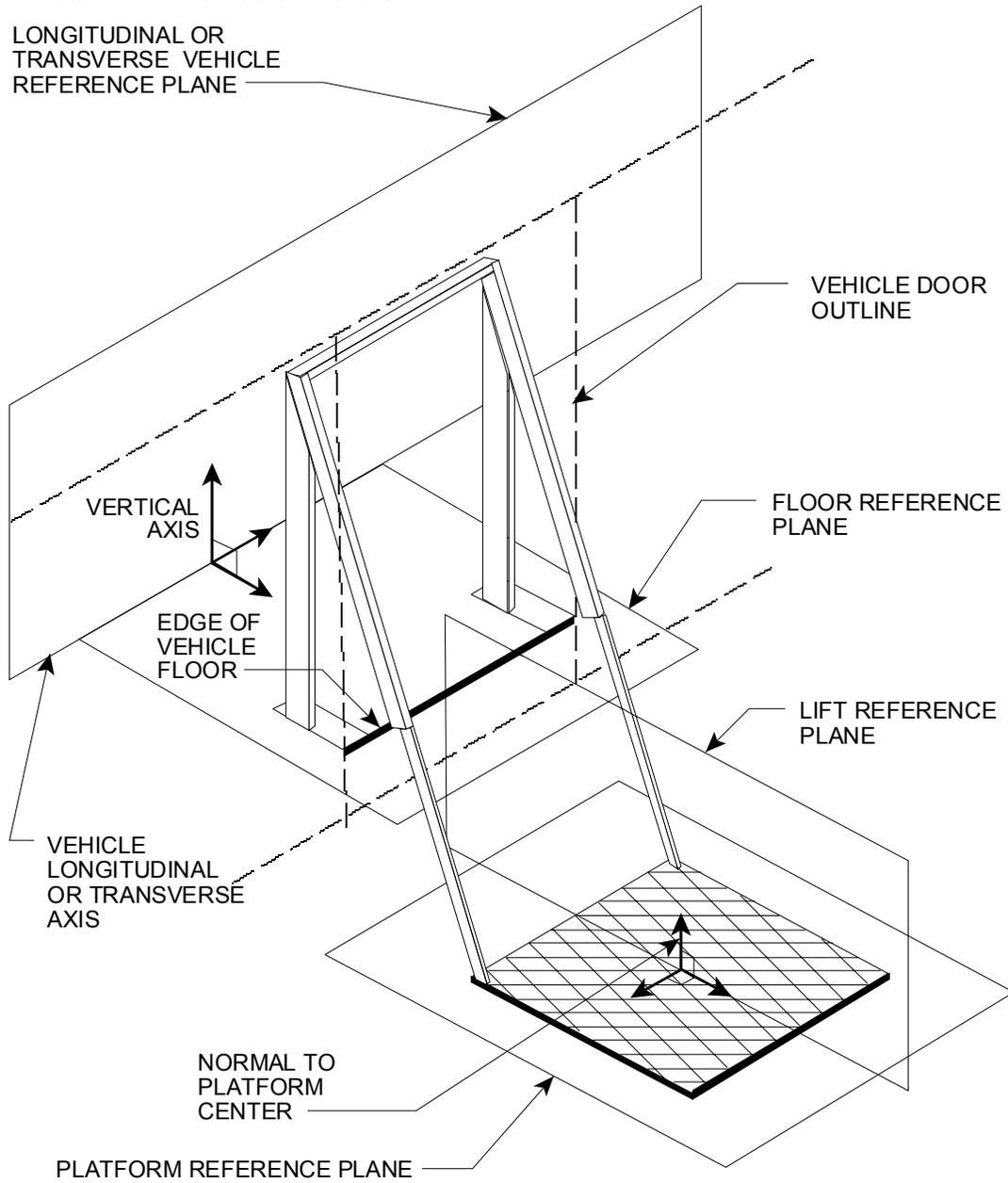
DATE: _____

APPROVED BY: _____

DATE: _____

17. LIST OF FIGURES

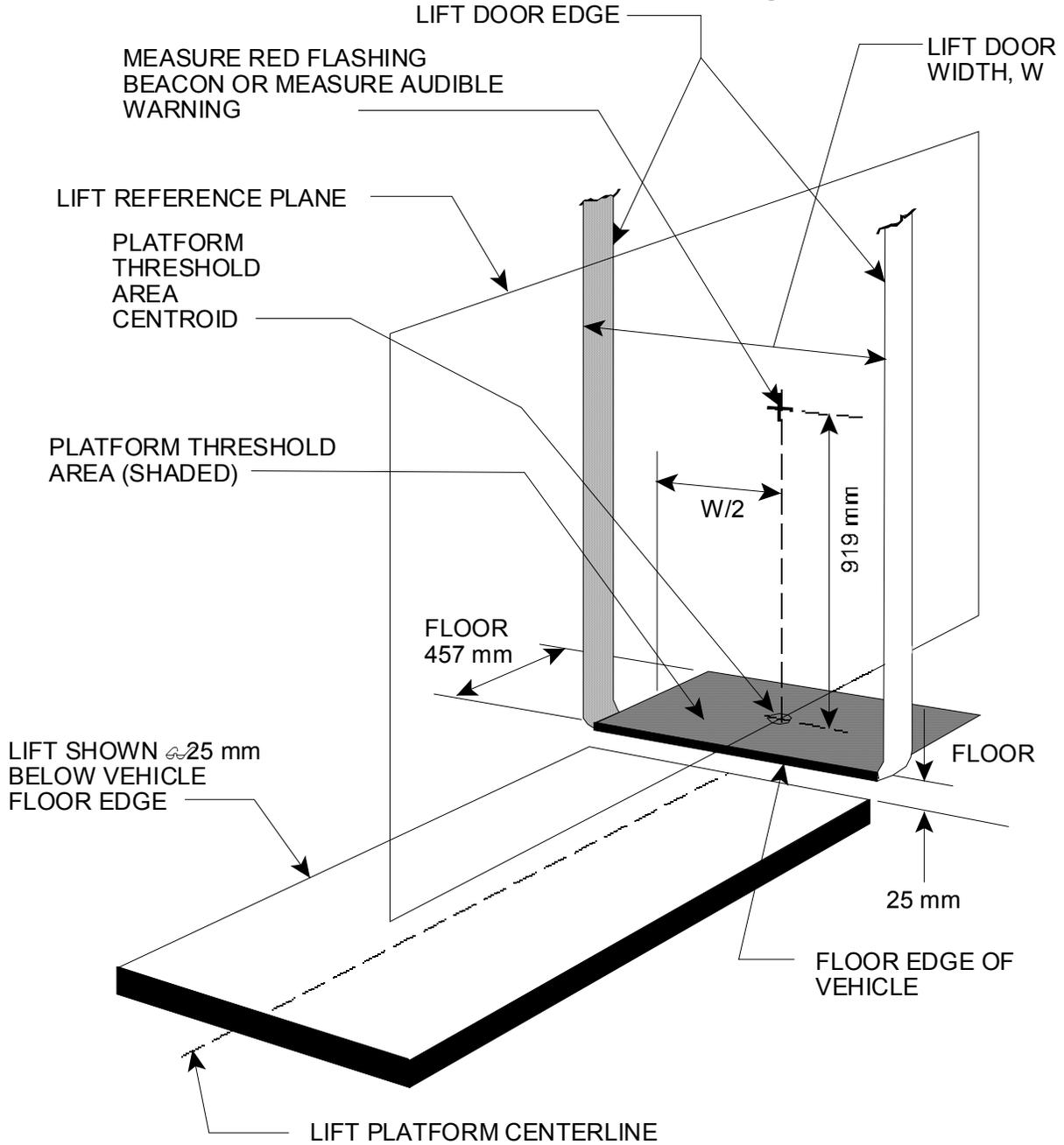
1. FIGURE 1: Planes of Reference



PLANES OF REFERENCE
FIGURE 1

17. LIST OF FIGURES....Continued

2. FIGURE 2: Platform Threshold Area Audible Warning Measurement Point

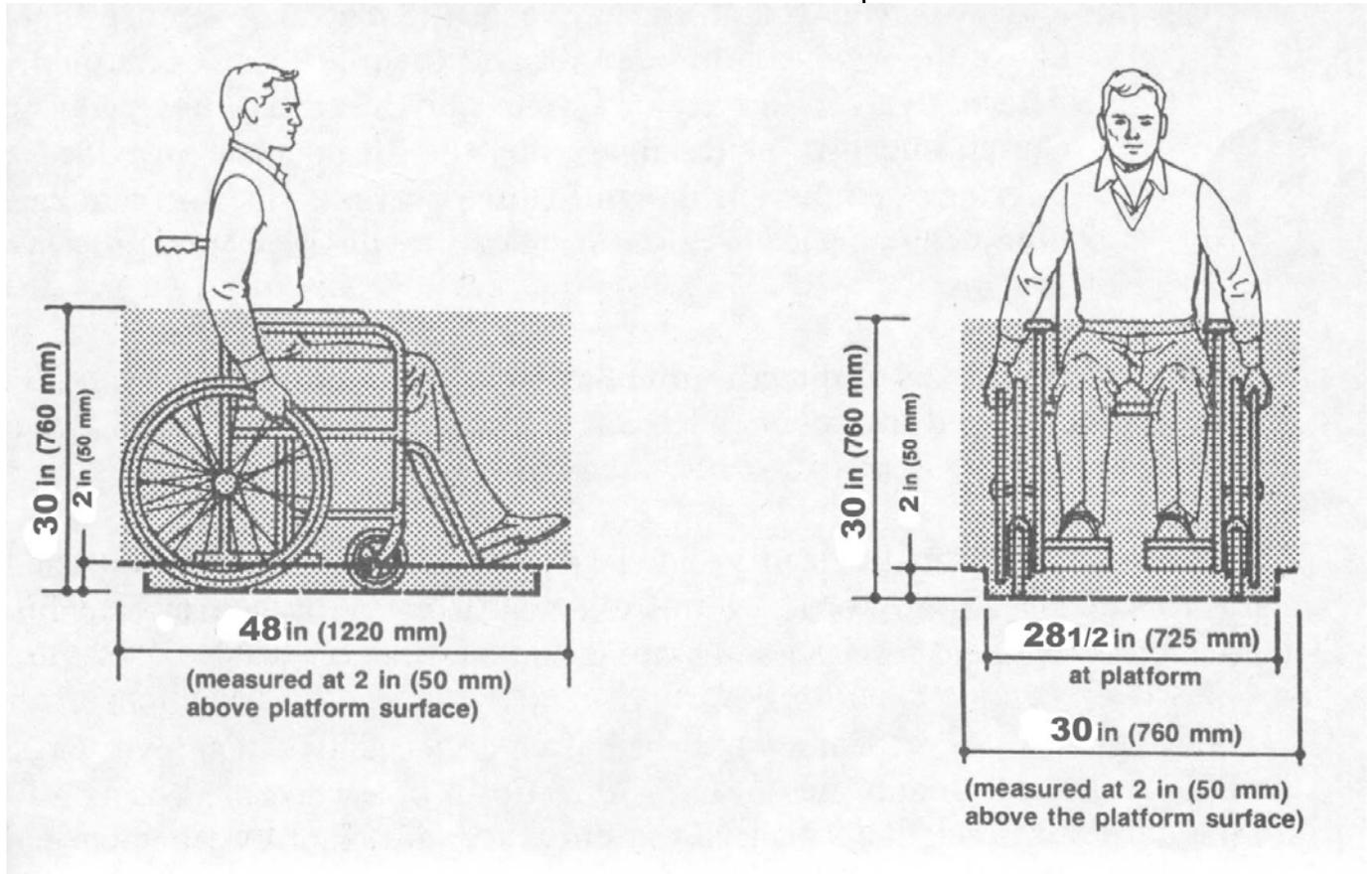


PLATFORM THRESHOLD AREA AUDIBLE WARNING MEASUREMENT POINT

FIGURE 2

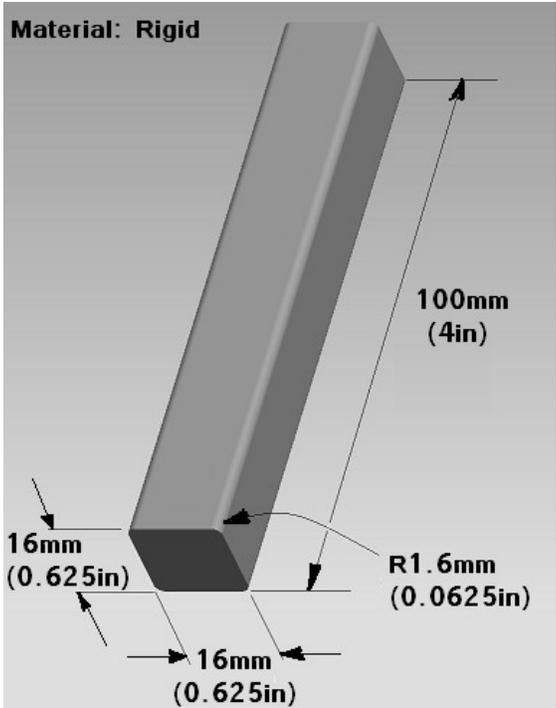
17. LIST OF FIGURES....Continued

3. FIGURE 3: Minimum Unobstructed Platform Operation Volume for Public Lifts

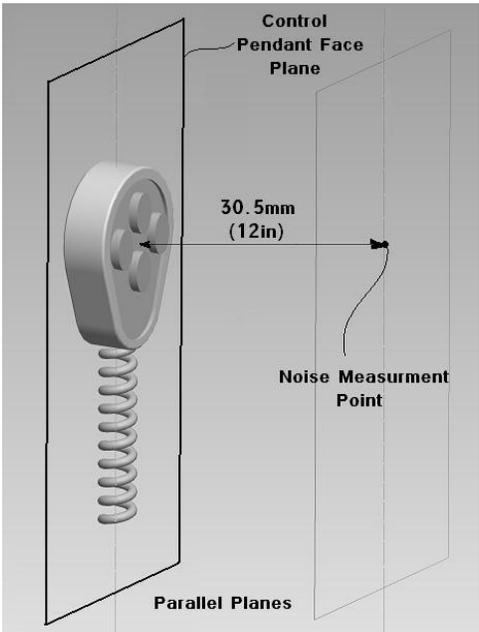


17. LIST OF FIGURES....Continued

4. FIGURE 4: Clearance Test Block For Gaps, Transitions, and Openings

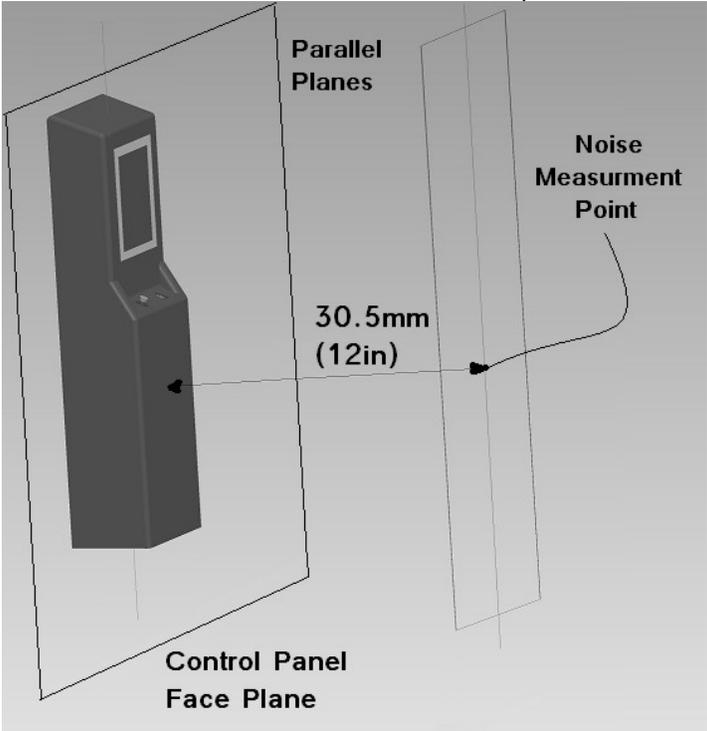


5. FIGURE 5: Lift Noise Measurement Location (Control Pendant)

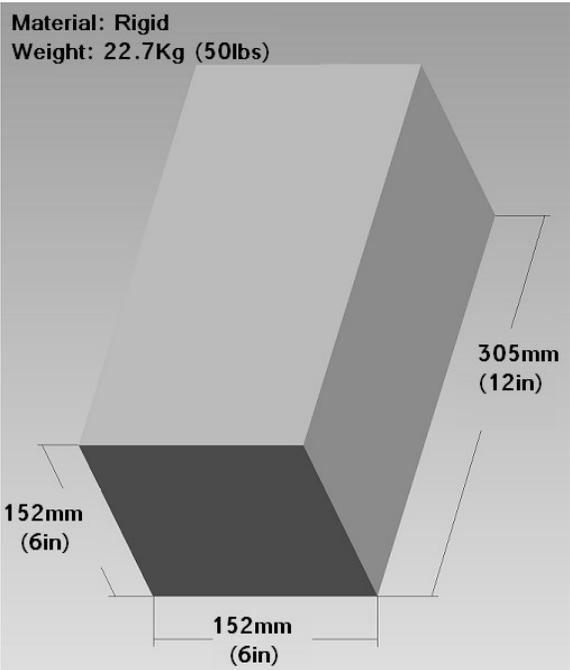


17. LIST OF FIGURES....Continued

6. FIGURE 6: Lift Noise Measurement Location (Control Panel)

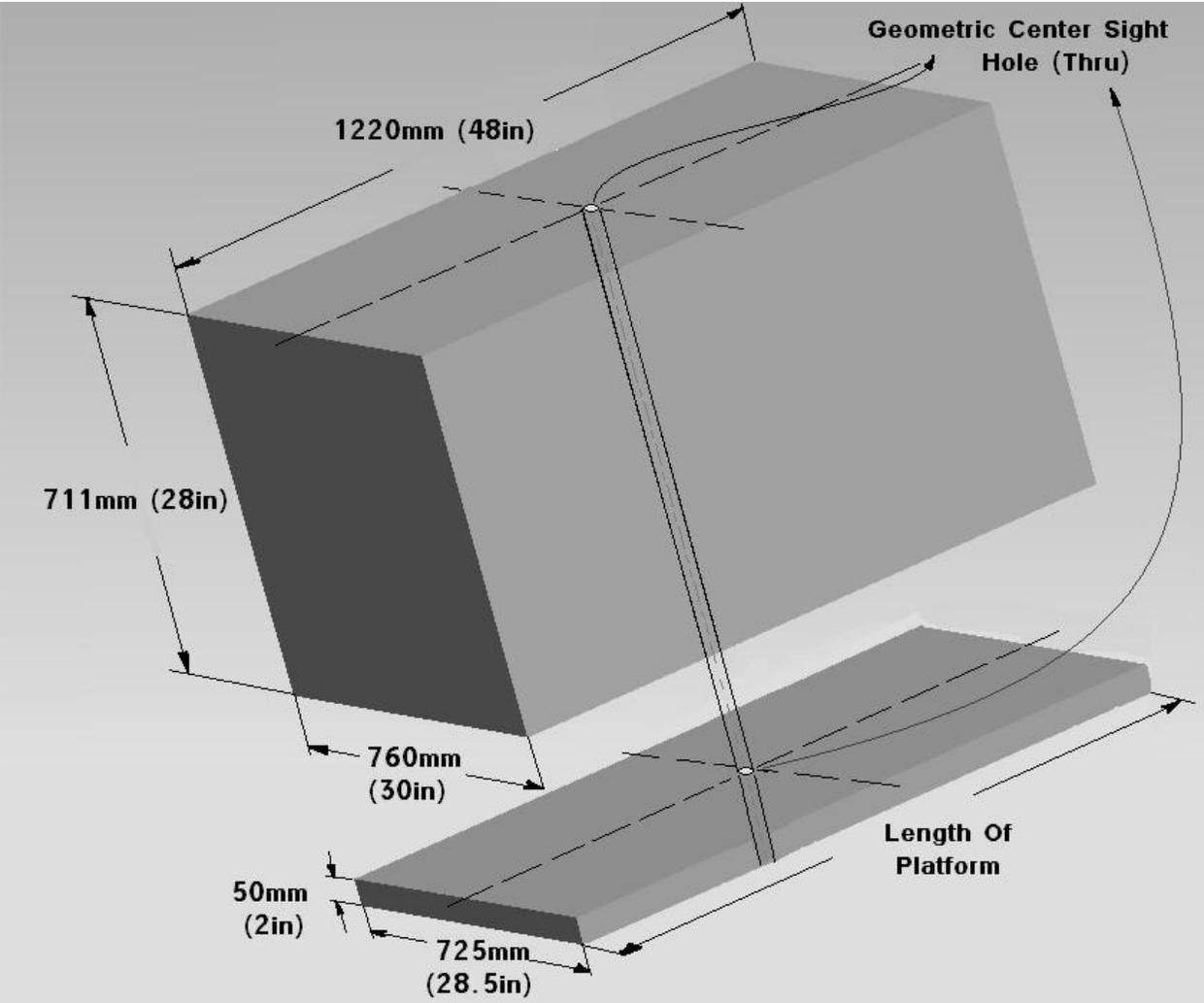


7. FIGURE 7: Rigid Box For Detecting Platform Occupancy



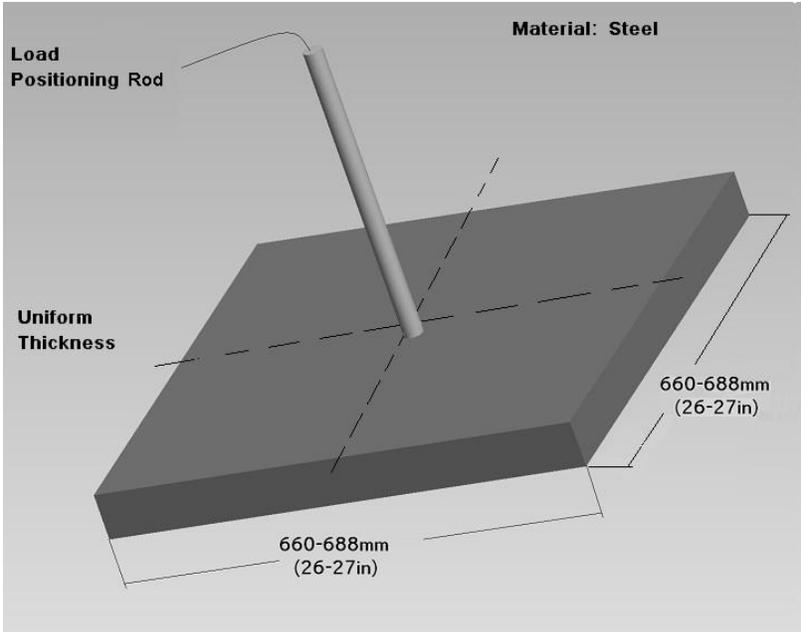
17. LIST OF FIGURES....Continued

8. FIGURE 8: Unobstructed Platform Operating Volume Fixture Assembly

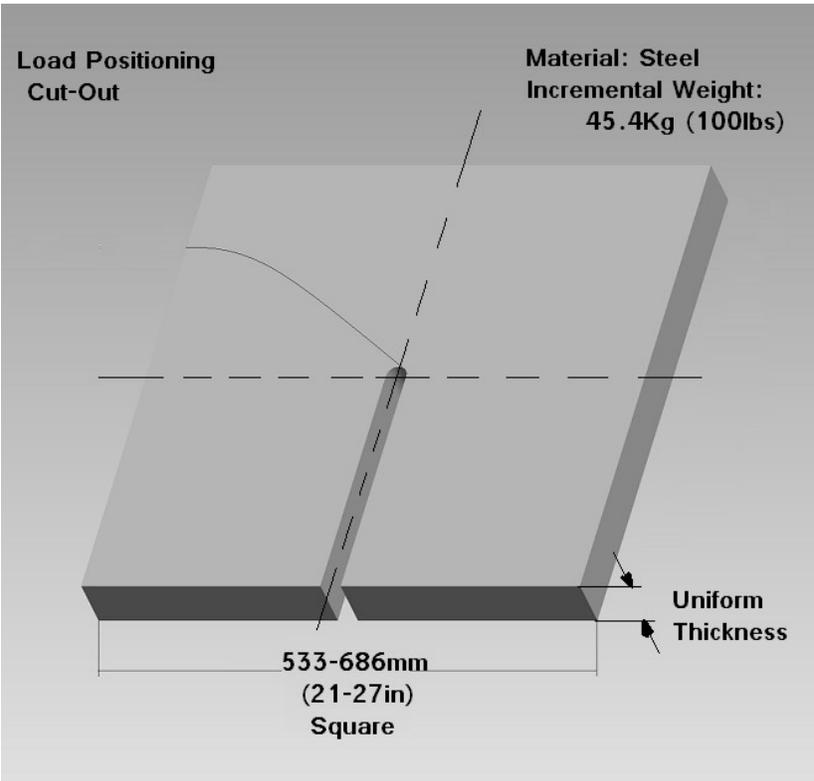


17. LIST OF FIGURES....Continued

9. FIGURE 9: Test Pallet

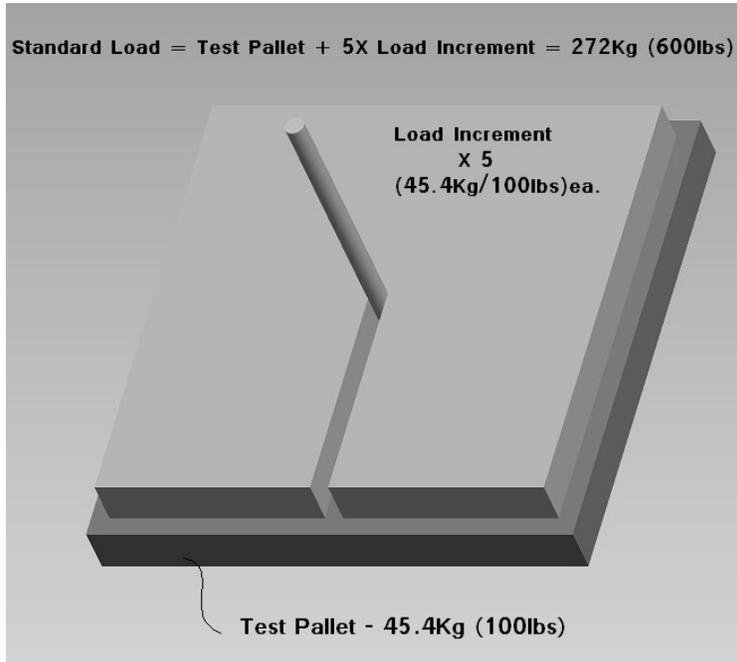


10. FIGURE 10: Test Pallet Load Increment

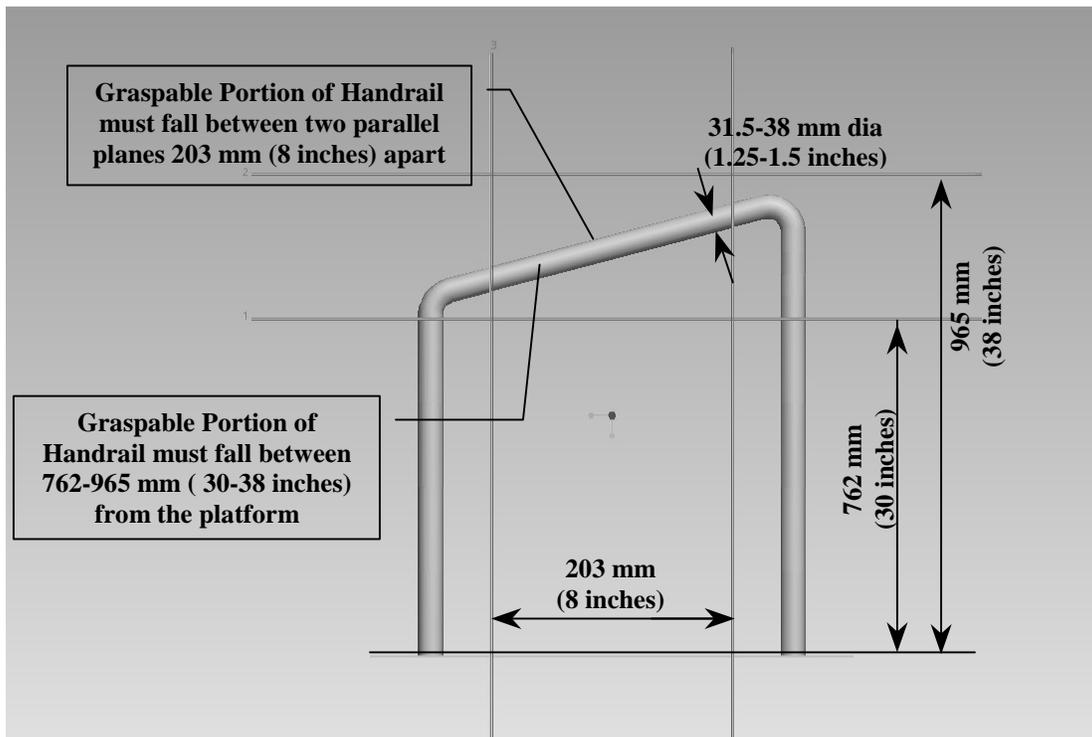


17. LIST OF FIGURES....Continued

11. FIGURE 11: Test Pallet w/Standard Load

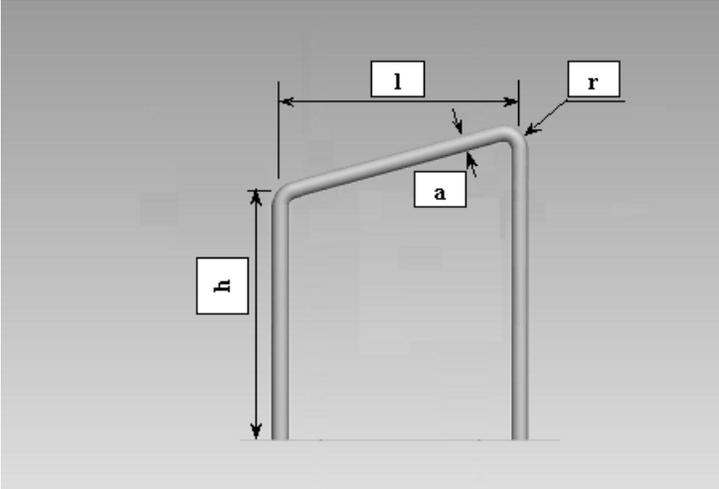


12. FIGURE 12: Handrail Requirements



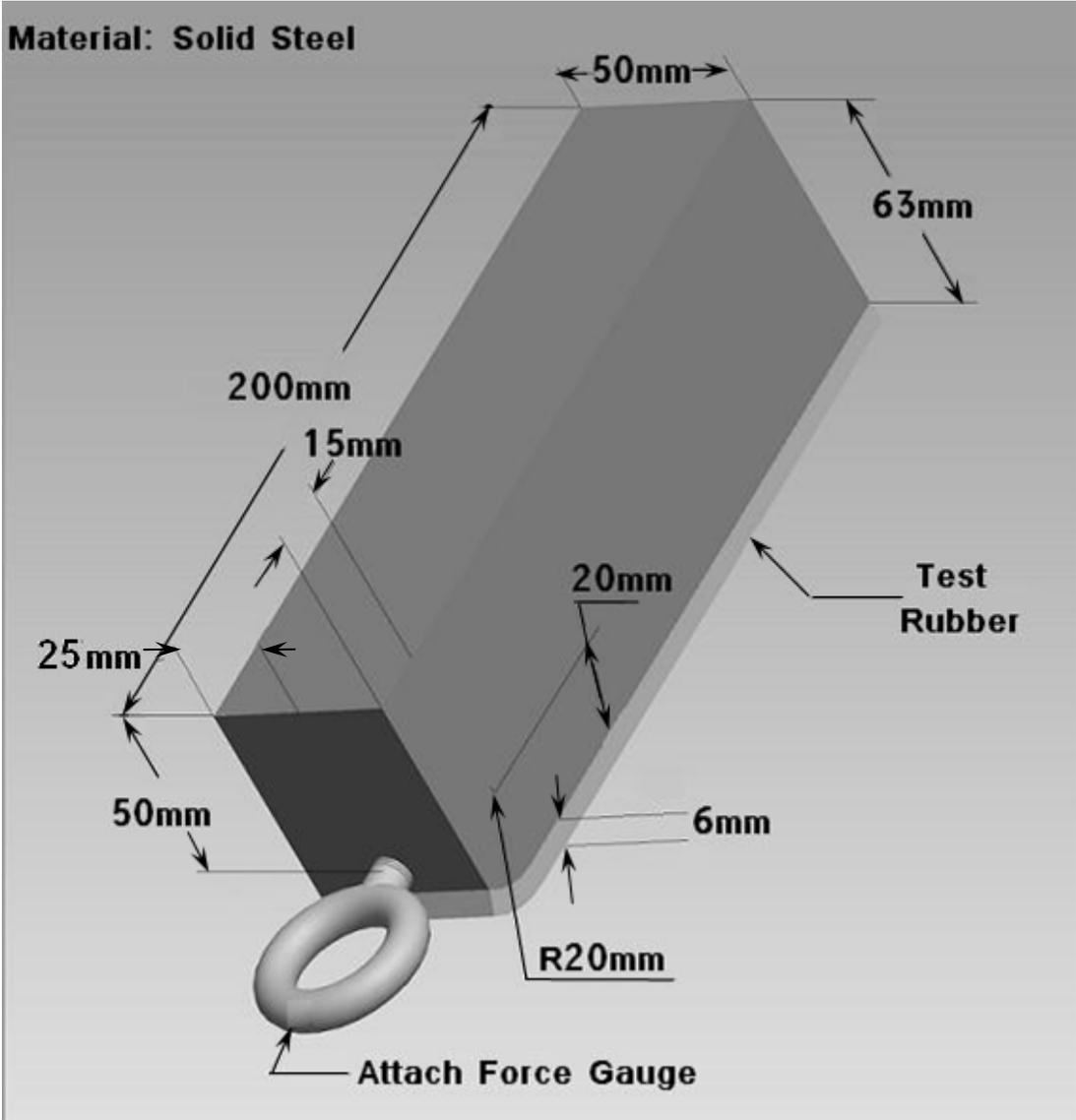
17. LIST OF FIGURES....Continued

13.FIGURE 13: Handrail Measurements



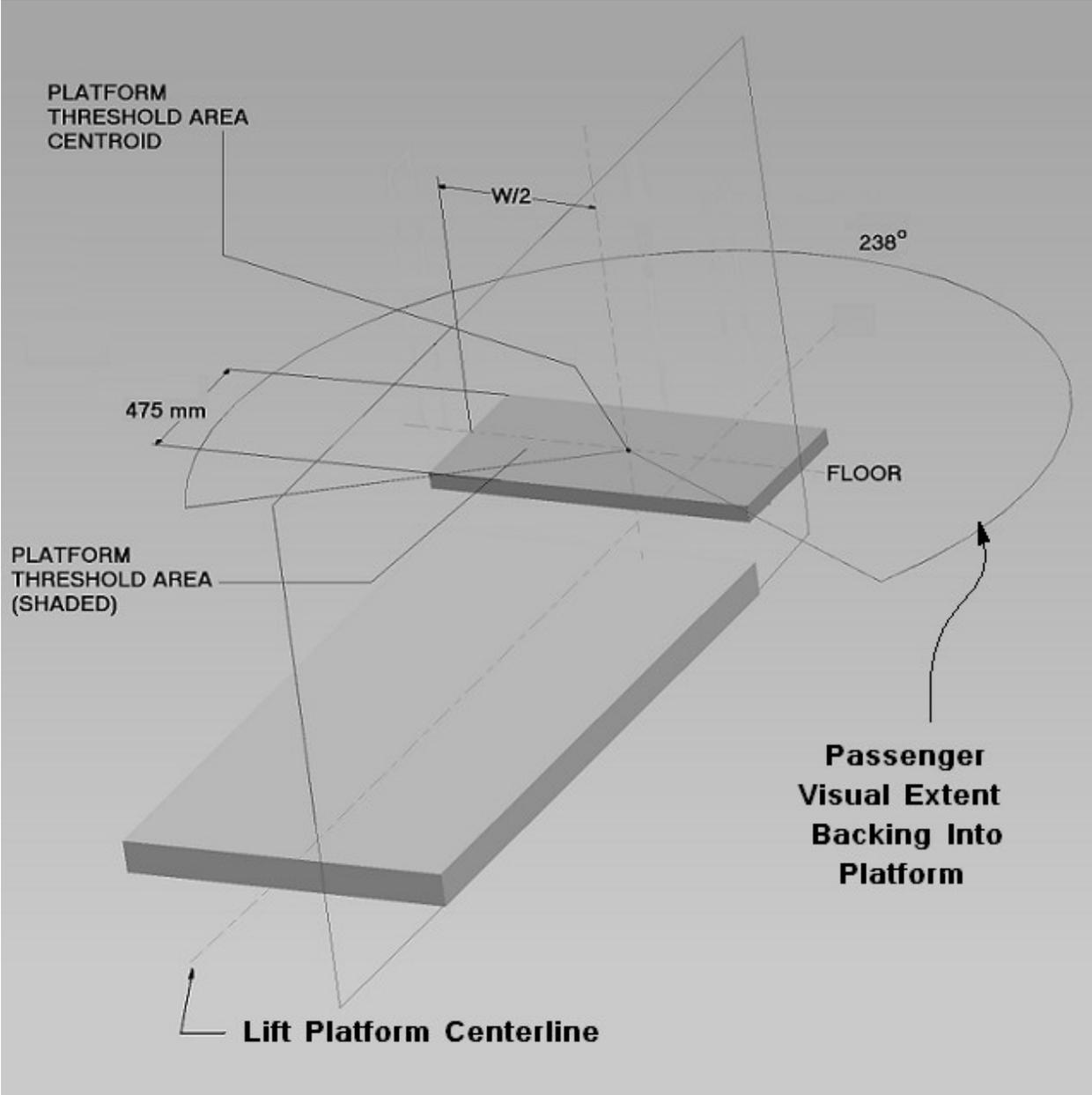
17. LIST OF FIGURES....Continued

14. FIGURE 14: Slip Resistance Test Block w/Rubber attached



17. LIST OF FIGURES....Continued

15.FIGURE 15: Passenger Viewing Extents of Visual Warning Signal



17. LIST OF FIGURES....Continued

16. FIGURE 16: Light Measurement Locations

