



AMERICAN NATIONAL STANDARD

**STANDARD METHOD FOR TESTING
GARAGE DOORS:
DETERMINATION OF LIFE CYCLING
PERFORMANCE**

ANSI/DASMA 109-2007

Door & Access Systems Manufacturers' Association, International

Sponsor:



1300 Sumner Ave
Cleveland, Ohio 44115-2851

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Determination of Life Cycling Performance**

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American National Standard

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Suggestions for improvement of this standard will be welcome. They should be sent to the Door & Access Systems Manufacturers' Association, International.

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Foreword (This foreword is included for information only and is not part of ANSI/DASMA 109-2007, *Standard Method for Testing Garage Doors: Determination of Life Cycling Performance.*)

This standard was developed by the Technical Committee of the DASMA Commercial & Residential Garage Door Division. It incorporates years of experience in testing sectional garage doors commonly found in garages. The committee and division believe the existence of the standard will provide a uniform basis of testing and rating the life cycling performance of such doors.

The DASMA Commercial & Residential Garage Door Division approved the standard as a DASMA standard on April 5, 1999. DASMA employed the canvass method to demonstrate consensus and to gain approval as an American National Standard. The ANSI Board of Standards Review granted approval as an American National Standard on August 15, 2001. The standard was reaffirmed, with editorial revisions, on August 17, 2007.

DASMA recognizes the need to periodically review and update this standard. Suggestions for improvement should be forwarded to the Door & Access Systems Manufacturers' Association, International, 1300 Sumner Avenue, Cleveland, Ohio, 44115-2851.

ANSI/DASMA 109-2007

AMERICAN NATIONAL STANDARD

Standard Method for Testing Garage Doors: Determination of Life Cycling Performance

1.0 Scope

1.1 This test method describes the evaluation apparatus of the physical cycling performance of a door system under normal operating conditions or other specified conditions.

1.2 This test method describes the apparatus and the procedure to be used for applying cyclic operation to a test specimen.

1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 Definitions

2.1 Cycle: One complete cycle of a door system begins with the door system in the closed position. The door system is then moved to the open position and back to the closed position.

2.2 Test specimen: The entire door system as defined in ANSI/DASMA 102.

2.3 Average annual cycles: Industry average estimated cycles per year as defined in ANSI/DASMA 102.

2.4 Door system: System as defined in ANSI/DASMA 102.

3.0 Summary of Test Method

3.1 Installing an entire door system and a method for cycling.

3.2 Operating the door system continuously, alternating from the fully closed position to the fully open position and vice versa.

3.3 Observing the number of cycles attained at failure, or achieving the desired number of cycles without failure. Failure may involve any component of the door system.

4.0 Apparatus

4.1 Test Frame

4.2 Test Specimen

4.3 Cyclic Measuring Device

5.0 Hazards

5.1 If failure occurs during testing, hazardous conditions may result.

5.2 Take proper safety precautions to protect observers in the event that a failure occurs.

5.3 Do not permit personnel to tamper with any portion of the door system during testing, except as permitted in Section 8.0.

6.0 Test Specimen

6.1 The test specimen shall consist of the entire assembled door system.

6.2 The test specimen shall include frame and anchorage as supplied or specified by the manufacturer for installation to the door opening, or as set forth in a referenced specification, if applicable.

7.0 Preparation of Test

- 7.1** Review any special test instructions with the testing agency, if applicable.
- 7.2** Fit the specimen against the door opening, as with a normally installed door system.
- 7.3** Support and secure the specimen by the same number and type of anchors used in installing the door system in a door opening.
- 7.4** Install a complete door system in accordance with the manufacturer's installation instructions, including the full track length and the door counterbalanced so that no more than the larger of 5% of the door weight or ten pounds applied force is required to open the door manually from the fully closed position.
- 7.5** Install a complete door operator assembly. Install the operator manufacturer's, or the door manufacturer's connection bracket per the manufacturer's installation instructions. Alterations to the operator are permitted to accelerate the cycle time, but these alterations must not influence the intended physical operation of the door system. The operator shall operate the door system a minimum average of 7 inches per second. Furthermore, if the operator is not a single speed, then the operator shall become part of the listing and shall be included in the door system.
- 7.6** Check the test specimen for proper adjustment, and check that the test specimen has been assembled in accordance with manufacturer's installation instructions. Fully open and fully close the door system five times after adjustments and prior to testing.
- 7.7** Adjust the force the door operator exerts to allow a properly operating door system.

8.0 Test Procedure

- 8.1** Check that the test specimen has been properly prepared for testing in accordance with documentation provided by the test engineer.
 - 8.2** Install a cycle-measuring device.
 - 8.3** Begin operation of the door system from the fully closed position. Continue alternating from fully closed, to fully open, to fully closed, etc.
 - 8.4** Periodically check the door system for failure as defined in Section 9.
 - 8.5** Continue open/close cycling until either the desired cycle rating is reached or when failure occurs. Periodic shutdowns are permitted.
 - 8.6** Lubrication shall be permitted per the manufacturer's recommendations based on average annual cycles, but lubrication shall not be done more frequently than once every 1500 cycles.
 - 8.7** Re-tightening of fasteners shall be permitted per the manufacturer's recommendations, but re-tightening shall not be done more frequently than once every 1500 cycles.
- ## **9.0 Failure**
- 9.1** The following shall constitute failure:
 - 9.1.1** Failure of any component of the door system causing the door to cease operation.
 - 9.1.2** Any roller detaching from the track, whether or not the door system continues to operate.

9.1.3 Any crack in a component that propagates to an extent that permanent deformation has occurred or extends across two free edges, such as from hole to the edge of a part.

9.1.4 Any fasteners observed as completely loose, i.e., fallen out, becoming completely separated from the specimen, etc., or that can no longer be tightened.

9.1.5 Any separation of required structural parts that were joined.

9.1.6 Dividing of one part or one assembly into multiple pieces whether or not the door system continues to operate.

10.0 Test Report

10.1 Identification of the test specimen.

10.1.1 Manufacturer.

10.1.2 Location of manufacturer.

10.1.3 Dimensions.

10.1.4 Model Types.

10.1.5 Material description.

10.1.6 Test specimen selection procedure.

10.2 Detailed drawings of the test specimen (separate drawings for each test specimen are not required if all test specimen differences are noted on the drawings).

10.2.1 Dimensioned section profiles.

10.2.2 Door system dimensions and arrangement.

10.2.3 Opening framing.

10.2.4 Installation and spacing of anchorage.

10.2.5 Hardware.

10.2.6 Any other pertinent construction details.

10.3 Type, quantity and location(s) of the operating hardware.

10.4 Glazing thickness and type, and method of glazing.

10.5 Record Ambient Temperature.

10.6 Record visual observations of performance. Note all occurrences related to performance, including, but not limited to, lubrication and re-tightening.

10.7 Record the mode of stoppage.

10.8 Record the last observed cycle without failure or the number of cycles completed when the test was halted.

10.9 Name of the individual that conducted the test.

10.10 Name and address of the testing facility.

10.11 Names of official observers.

10.12 Other data, useful to the understanding of the test report, as determined by the laboratory or specifier, shall either be included within the report or appended to the report.

11.0 REFERENCES

11.1 ANSI/DASMA 102, *Specifications for Sectional Overhead Type Doors*

ANSI/DASMA 109-2007
Test Report Form
Cycle Life Performance

Test Specimen Identification:

Manufacturer _____
Manufacturer Location _____
Model Type/Number _____ Dimensions _____
Material Description _____
Test Specimen Selection Procedure _____

Applicable Drawing No.'s _____

Operating Hardware (Type, Quantity, Location(s)):

Glazing Description: _____

Ambient Temperature: _____

Performance

Visual Observations of Performance:

Was specimen lubricated during test? _____ If yes, record the cycle(s) when lubrication was performed:

Were fasteners re-tightened during test? _____ If yes, record the cycle(s) when re-tightening was performed: _____

Mode of Stoppage: Stopped at failure _____ Stopped without failure _____

Last observed cycle without failure or number of cycles completed when test halted: _____

Notes: _____

Testing Conducted by _____ **of** _____

Signature of Tester _____ **Date** _____

Test Facility and Location _____

Official Observers _____

