AMERICAN NATIONAL STANDARD

STANDARD FOR COUNTERBALANCE SYSTEMS ON RESIDENTIAL SECTIONAL GARAGE DOORS

ANSI/DASMA 103 - 2001 (R2006)

Door & Access Systems Manufacturers' Association, International

Sponsor:

DASMA
Door & Access Systems Manufacturers Association International

1300 Sumner Ave
Cleveland, Ohio 44115-2851

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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 103-2001 (R2006), *Standard for Counterbalance Systems on Residential Sectional Garage Doors.)*

The Door & Access Systems Manufacturers' Association, International, (DASMA) Commercial & Residential Garage Door Technical Committee developed this standard at the direction of the Commercial & Residential Garage Door Division. The committee developed much of the standard in 1998 and 1999, but the committee also incorporated parts of a standard that had been developed by the National Association of Garage Door Manufacturers (NAGDM), NAGDM 103, *Method of Test for Extension Spring and Containment Devices as Used on Overhead Type Garage Doors*.

The standard was approved as a DASMA standard by the Commercial & Residential Garage Door Division, and 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 and reaffirmed on August 4, 2006.

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 103-2001 (R2006)

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Standard for Counterbalance Systems on Residential Sectional Garage Doors

1.0 SCOPE

1.1 This standard defines performance-based and prescriptive-based methods of compliance for sectional door counterbalance system components under tension.

1.2 Without limitation, DASMA does not represent or imply that this standard relates to any component or system other than counterbalance systems expressly identified and described herein.

1.3 Inclusions: This specification for sectional garage doors, as defined in Section 2, is intended to cover residential sectional garage doors generally used for vehicular traffic.

2.0 DEFINITIONS

2.1 Counterbalance System: A system, which counteracts the weight of a garage door to allow a balanced force to open and close the door.

2.2 Counterbalance Tension: Force of the counterbalance approximately equal to the weight of the garage door.

2.3 Extension Spring System: A counterbalance system, which provides a lifting force by the stretching of an extension spring using pulleys with lift cables attached.

2.4 Residential Garage Door: A door which is intended for use in a residential garage, and is normally expected to be operated less than 1,500 cycles per year.

2.5 Residential Sectional Garage Door System: Sections, tracks, counterbalance, and other components necessary to produce an operational sectional garage door per ANSI/DASMA 102.

2.6 Sectional Type Door: Doors made of two or more horizontal sections hinged together so as to provide a door large enough to close the entire opening and which is guided into the horizontal position, or into the vertical position, by means of an extended vertical track system.

2.7 Torsion Spring System: A counterbalance system, which provides a lifting force through a torsion spring, a torsion shaft and cable drums, with lift cable attached.

2.8 Weight System: A counterbalance system, which provides a lifting force by means of weights using pulleys with lift cables attached.

3.0 RETENTION OF COUNTERBALANCE SYSTEM COMPONENTS UNDER TENSION

3.1 The door system shall have one of the following as described in Sections 3.1.1, 3.1.2, or 3.1.3:

3.1.1 The design of retention of the door system components that are under counterbalance tension shall be such that the components or fasteners cannot be either accidentally or unintentionally removed prior to removing the tension from the counterbalance system.

3.1.2 Fasteners used to attach the counterbalance system components shall require special knowledge, skill or tool to be removed. Fasteners may include, but not be limited to, unidirectional screws, and screws with heads requiring a special tool for removal.

3.1.3 Fasteners used to attach the door system components that are under counterbalance system tension shall be red in color. Warning decals in accordance with the applicable provisions of ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4 and ANSI Z535.5 shall be placed on the door at the bottom corner brackets, spring(s), and on the inside or interior face of the door that include a warning not to remove the red fasteners

3.2 A counterbalance spring or weight shall be restrained either on the inside or the outside.

4.0 METHOD OF TEST FOR EXTENSION SPRING RESTRAINING DEVICES

4.1 Restraining Devices

4.1.1 Cycling. Three units of each type of restraining device shall be cycled with maximum design spring load at 1.5 times the rated number of cycles for the spring.

4.1.2 Load Tests

4.1.2.1 Three units of each size of restraining device shall be installed on the maximum size spring for which each is designed.

4.1.2.2 Each spring tested shall be extended to the maximum recommended stretch, and the restraining device for each spring shall restrain the spring, end loops and pulleys when each spring tested is destroyed.

4.1.2.3 Spring destruction methods may include, but shall not be limited to, acetylene torch, grinding, or arc welding.

4.1.2.4 Each spring shall be destroyed at a different location within the spring. Locations of destruction shall be the center and the last stretched coil (end loop) at each end.

4.1.2.5 When springs are attached in tandem, additional tests shall be conducted in the same locations set forth in Section 4.1.2.4 for the additional spring.

4.1.3 Acceptance Criteria

4.1.3.1 Three out of three of each restraining device tested shall be subjected to the provisions of Section 4.1.1, followed by the provisions of Section 4.1.2, without failure. Failure shall include, but not be limited to, fracturing, breakage or similar occurrence to the restraining device, which allows the spring, end loops or pulleys to not be restrained upon fracturing, breakage or similar occurrence of the spring.

5.0 REFERENCES

ANSI/DASMA 102-1996, *Specifications for Sectional Overhead-Type Doors*

ANSI Z535.1-1998, *Safety Color Code*

ANSI Z535.2-1998, *Environmental and Facility Safety Signs*

ANSI Z535.3-1998, *Criteria for Safety Symbols*

ANSI Z535.4-1998, *Product Safety Signs and Labels*

ANSI Z535.5-1998, *Accident Prevention Tags*

DASMA – the Door & Access Systems Manufacturers Association, International – is North America's leading trade association of manufacturers of garage doors, rolling doors, garage door operators, vehicular gate operators, and access control products. With Association headquarters based in Cleveland, Ohio, our 90 member companies manufacture products sold in virtually every county in America, in every U.S. state, every Canadian province, and in more than 50 countries worldwide. DASMA members' products represent more than 95% of the U.S. market for our industry.

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