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DIRECTORATE FOR ENGINEERING SCIENCES

1999 JUL 27 P 12:44

SUBJECT: Proposals for DASMA standard

DATE OF MEETING: March 29, 1999

PLACE: East West Towers
Room 715
Bethesda, MD

LOG ENTRY SOURCE: John Murphy, ESME

JRM

DATE OF ENTRY: March 29, 1999

COMMISSION ATTENDEES:

- Marc Schoem, CRC
- John Murphy, ESME
- Robert Ochsman, ESHF
- Suad Nakamura, HS

NON-COMMISSION ATTENDEES:

- John Addington, DASMA
- Joe Hetzel, DASMA
- Naomi Engle, DASMA
- Albert Mitchell, Wayne Dalton Corp.
- Alan Leist, Clopay Corp.
- David Martin, Martin Door Manufacturing, Inc.

SUMMARY OF MEETING

The meeting convened at 1:00 PM. The Door and Access Systems Manufacturers Association, International (DASMA) requested the meeting to discuss proposed requirements for sectional garage doors. A DASMA technical committee has developed the requirements in response to a proposal made by the Commission staff. Alan Leist (Clopay), chairman of the technical committee, discussed the DASMA proposed requirements for counterbalance systems on residential sectional garage doors (Copy of the proposal is attached). The new requirements will be added to the **Method of Test for Extension Spring and Containment Devices as Used on Overhead Type Doors (ANSI/DASMA 103)**. The standard will require that the door system shall have one of the following

- 1 Components under tension cannot be accidentally or unintentionally removed prior to removing the tension from the system.
- 2 Fasteners used to attach components under tension shall require special knowledge, skill, or tool to be removed.
- 3 Fasteners used to attach components under tension shall be colored red and a warning label must be on the door indicating that red fasteners must not be removed.

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In addition, a counterbalance spring or weight shall be restrained either on the inside or the outside.

The new requirements still need to be voted on by DASMA's members. The Commission staff was given 30 days to provide comments on the proposed requirements. The standard will take effect once DASMA's members approve it. Once approved the standard will be submitted to ANSI. DASMA uses the ANSI canvass method to develop an ANSI standard. ANSI approval is expected to take from 6 months to 1 year.

DASMA also discussed work that the technical committee is doing to develop a performance requirement for pinch resistant joints. The committee has decided to accept the Commission's proposal that a "traditional" section joint should not open more than 9mm or if it does it must not entrap an object 25mm in diameter. The committee is working to expand the proposal to include performance requirements for doors that use shields or other technologies to provide pinch resistance. The test proposed by the committee would use a urethane rod or rods. If a standardized finger probe does fit ¼ inch into the joint then a urethane rod of a yet to be determined diameter would be inserted into the joint and the door closed. If the door does not close, the rod is damaged, the door is damaged, or the force exceeds a preset level the door would fail the test. DASMA plans to send rods to various manufacturers soliciting comments on the urethane rods. Work still needs to be done to decide on an acceptable withdrawal force, and to write up a proposal for the test.

The requirements will be added to the standard for **Official Color Codes for Torsion and Extension Springs (DASMA/ANSI 106)**.

This standard will follow the same procedure for implementation as outlined for DASMA/ANSI 103 above.

DASMA indicated that October is garage door safety month. DASMA uses the month to promote garage door safety. DASMA is distributing a coloring book on garage door, garage door opener, and gate operator safety. The idea is to inform children of good safety practices around garage doors and automatic gates. The meeting convened at 2:00 PM.

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DASMA 103-1999

Standard for Counterbalance Systems on Residential Sectional Garage Doors

1. 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. 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 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. 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. METHOD OF TEST FOR EXTENSION SPRING RESTRAINING DEVICES

4.1 Restraining Devices

√ 4.1.5 Cycling. Three units of each type restraining device shall be cycled with maximum design spring load at 1.5 times the rated number of cycles for the spring.

4.1.6 Load Tests

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

4.1.2.8 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.

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

4.1.2.10 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.

4.1.2.11 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.

4.1.12 Acceptance Criteria

4.1.3.13 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.

REFERENCES

- ANSI/DASMA 102-1996, *Specifications for Sectional Overhead-Type Doors*
ANSI Z535.1-1991, *Safety Color Code*
ANSI Z535.2-1991, *Environmental and Facility Safety Signs*
ANSI Z535.3-1991, *Criteria for Safety Symbols*
ANSI Z535.4-1991, *Product Safety Signs and Labels*
ANSI Z535.5-1991, *Accident Prevention Tags*