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DASMA STANDARD

**SPECIFICATION FOR HIGH PERFORMANCE  
DOORS AND GRILLES**

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DASMA 402-2020

Door & Access Systems Manufacturers' Association, International

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Sponsor:



1300 Sumner Ave  
Cleveland, Ohio 44115-2851

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**Specification for High Performance Doors and Grilles**

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**Door & Access Systems Manufacturers' Association, International**

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Suggestions for improvement of this standard will be welcome.  
They should be sent to the Door & Access Systems Manufacturers'  
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**Foreword** (This foreword is included for information only and is not part of DASMA 402-2020, *Specification for High Performance Doors and Grilles.*)

This standard was developed by the DASMA High Performance Door Division. It incorporates years of experience applying performance specifications to high performance doors and grilles.

The DASMA High Performance Door Division approved the standard as a DASMA standard on January 27, 2020.

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.

**DASMA 402-2020**  
**Specification for High Performance Doors and Grilles**

**1. SCOPE**

1.1. Inclusions. This specification for high performance doors and grilles is intended to cover automated rolling doors, folding doors, sliding doors, and rolling grilles normally used on garages, warehouses, factories, service stations, and other places required for use in vehicular access, material handling, security, or in special instances pedestrian egress.

1.2. Exclusions. It is not intended to cover doors generally used for residential door applications, or other types of doors such as rigid, multi-leaf, sectional, or vertical bi-folding.

**2. DEFINITIONS**

2.1 Coiling Door. A vertically operating door that includes a curtain which wraps into a spiral when opening.

2.2 Cycle. A door or grille moved from the closed position to the fully open position and returned to the closed position.

2.3 Folding Door. A door made of two or more sections hinged together that fold against each other when opened horizontally.

2.4 High Performance Door. A power-operated rolling, folding or sliding non-residential door, generally characterized by either 100 or more cycles per day or 20 or more inches per second opening speed, and typically made-to-order and/or designed for higher durability, and/or designed to break away due to equipment impact.

2.5 High Performance Grille. A power-operated rolling grille, generally characterized by either 100 or more cycles per day or 20 or more inches per second opening speed, and

typically made-to-order and/or designed for higher durability.

2.6 Multi-Leaf Door. A door made of two or more stacking horizontal sections which interlock without the benefit of hinges.

2.7 One-piece Door. See Rigid Door.

2.8 Rigid Door. A door made in one rigid piece designed to close an entire opening. Opening and closing is accomplished by pivoting the door about an axis, with or without a horizontal track to guide the top of the door.

2.9 Rolling Door. A vertically operating coiling door typically used in commercial or industrial applications.

2.10 Rolling Grille. A vertically operating coiling door typically consisting of assembled interlinked rods of steel, stainless steel, or aluminum.

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

2.12 Sliding Door. A door consisting of a single panel, or bi-parting panels, operating horizontally.

2.13 Vertical Bi-Folding Door. A door made of two sections hinged together and fold against each other when opened vertically.

2.14 Vertical Sliding Door. A door made of single or multiple sections attached at the edges that move as a unit vertically

(NOTE: A glossary of common industry terms can be found in DASMA Technical Data Sheet #451, High Performance Door Terminology).

### 3. REFERENCED STANDARDS

The following standards are a part of this standard to the extent that they are referenced in the text. Conformance shall be to the latest edition of each referenced standard listed below.

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

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

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

3.4 ANSI/DASMA 105, *Test Method for Thermal Transmittance and Air Infiltration of Sectional Doors, Rolling Doors and Flexible Doors*

3.5 ANSI/DASMA 108, *Standard Method for Testing Sectional Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference*

3.6 ANSI/DASMA 115, *Standard Method for Testing Sectional Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure*

3.7 UL 325, *Safety Standard for Door, Drapery, Gate, Louver, and Window Operators and Door Systems*

3.8 UL 508A, *Standard for Industrial Control Panels*

### 4. INSTALLATION/OPERATION

The door or grille manufacturer shall furnish standard details and instructions for proper installation and operation. Such instructions

shall include warnings relative to the installation and operation of the door or grille.

### 5. MAINTENANCE

The door or grille manufacturer shall furnish a listing of those components requiring regular maintenance with instructions and frequencies for such maintenance.

### 6. DURABILITY

6.1 The door or grille shall be designed to operate at a minimum of 100,000 cycles when they are properly selected, installed, operated, and maintained.

6.2 The door or grille shall be designed to operate for the specified cycle life when more than 100,000 cycles are specified, and when they are properly selected, installed, operated, and maintained.

### 7. IDENTIFICATION

Each door or grille shall be labeled to identify the name and address of the door or grille manufacturer.

### 8. GENERAL REQUIREMENTS

8.1 Manual Operation. Where manual operation is required for the purpose of operating the door or grille during a loss of power, the door or grille shall comply with the following:

8.1.1 The door or grille shall be operable by a simple method without special knowledge or effort.

8.1.2 Chain hoist, crank, handles, or gripping points shall be provided as needed based on door or grille operation function.

8.1.3 Where used for egress, the force required to operate the door or grille shall not exceed 30 pounds (133 N) to set the door or grille in motion and 15 pounds (67 N) to

close or open the door or grille to the minimum required height and width.

## 8.2 Power Operation

8.2.1 If an operator is labeled and listed, such operator shall be designed in compliance with the applicable sections of the version of UL 325, or the control panel or enclosure in accordance with UL 508A, in effect at the time of manufacture.

8.2.2 Where applicable, the door or grille, and operator, shall comply with the sections of the version of UL 325 or UL 508A in effect at the time of manufacture.

8.3 Egress. Where a door is provided as a component in a means of egress, at least one of the following shall be required:

8.3.1 Manual operation in accordance with Section 8.1.

8.3.2 Door panels capable of being broken out manually in the event of power failure by a simple method from either side without special knowledge or effort. The force required to break out the door panels shall not exceed 30 pounds (133 N), and the force required to push open the door panels to the minimum height and width for each egress opening shall not exceed 15 pounds (67 N).

8.3.3 An electrically supervised, integrated backup power supply.

8.4 Thermal Transmittance/Air Infiltration. Published thermal transmittance and air infiltration values of installed doors shall be in accordance with the test methods specified in ANSI/DASMA 105.

8.5 Steel Gauge Numbers. Published steel gauge numbers shall be in accordance with DASMA Technical Data Sheet #154, DASMA Steel Gauge Chart.

8.6 Flame Spread and Smoke Development. Materials used in doors shall meet requirements established by the authority having jurisdiction for flame spread and smoke development.

8.7 Speeds and Cycles. Door or grille shall be designed for at least one of the following

8.7.1 Open at a minimum speed of 20 inches per second.

8.7.2 Designed to operate at a minimum of 100 cycles per day, averaged on a yearly basis.

8.8 Closing device. Where required, door or grille shall be supplied with a device to automatically close the door or grille after a set time as needed after the door or grille has reached the fully open position.

8.9 Special design features.

8.9.1 Doors shall be classified by at least two of the following.

8.9.1.1 Made-to-order.

8.9.1.2 Designed for higher durability.

8.9.1.3 Designed to break away due to equipment impact.

8.9.2 Grilles shall be classified by at least one of the following.

8.9.2.1 Made-to-order.

8.9.2.2 Designed for higher durability.

## 9. LOADS

9.1 Wind Resistance Design.

9.1.1 A door shall be designed to withstand a minimum wind load as required by the authority having jurisdiction over the geographic location where the door is to be installed. When required by the authority having jurisdiction, structural tests shall be in accordance with ANSI/DASMA 108 or other



accepted means required by the authority having jurisdiction.

9.1.2 Where resistance to windborne debris is required by the authority having jurisdiction over the geographic location where the door is to be installed, the door shall meet the requirements of ANSI/DASMA 115 or other accepted means as required by the authority having jurisdiction.

## **10. LABELS**

10.1 DASMA label HPDD-400 shall be placed on the door as described in DASMA TDS-452.

10.2 Labels in accordance with the applicable provisions of ANSI-Z535.1, ANSI-Z535.3 and ANSI-Z535.4 shall be placed on the door or grille.

## **11. OTHER REFERENCED DOCUMENTS**

The following documents are a part of this standard to the extent that they are referenced in the text. Conformance shall be to the latest edition of each referenced document listed below.

11.1 DASMA TDS-154, *DASMA Metal Gauge Chart*

11.2 DASMA TDS-451, *High Performance Door Terminology*

11.3 DASMA TDS-452, *High Performance Door Warning Label*



**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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