



ANSI/DASMA 208-2020

AMERICAN NATIONAL STANDARD

**STANDARD FOR
ROLLING GRILLES**

ANSI/DASMA 208-2020

Door & Access Systems Manufacturers' Association, International

Sponsor:



1300 Sumner Ave
Cleveland, Ohio 44115-2851

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Rolling Grilles**

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Suggestions for improvement of this standard will be welcome.
They should be sent to the Door & Access Systems Manufacturers' Association,
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Foreword (This foreword is included for information only and is not part of DASMA 208-2020, *Standard for Rolling Grilles*).

This standard was developed by the technical committee of the DASMA Rolling Door Division. It incorporates years of experience in designing and testing rolling grilles.

The DASMA Rolling Door Division initially approved the standard as a DASMA standard in March 2009, and approved this version of the standard in September 2018. DASMA employed the canvass process 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 in December 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 208-2020
AMERICAN NATIONAL STANDARD
Standard for Rolling Grilles

1.0 Scope

1.1 This standard defines minimum design and performance specifications for rolling grilles in commercial and industrial applications, consisting of assembled, interlinked rods of steel, stainless steel, or aluminum.

1.2 This standard for rolling grille assemblies shall be intended to cover applications such as but not limited to malls, parking garages, commercial and industrial type warehouses, and factories. Rolling grilles intended for frequent use should be designed for high cycle operation. Refer to section 10.1.2.

1.3 This standard is not intended to cover doors such as rigid, folding or multi-leaf sectional type doors, rolling fire doors, rolling doors, perforated slat construction, or special applications. Rolling sheet doors intended for frequent use should be designed for high cycle operation. Refer to Section 11.1.2.

1.4 Grilles are not intended to be designed for wind and windborne debris resistance.

1.5 Without limitation, DASMA does not represent or imply that this standard relates to any component or system other than the rolling grilles expressly identified and described herein.

1.6 See informational statements in Appendix A on important design and operation information.

2.0 Definitions.

2.1 Astragal: A compressible seal provided on the underside of the bottom bar.

2.2 Authority Having Jurisdiction (AHJ): The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

2.3 Barrel Assembly (Shaft Assembly): A cylindrical horizontal member at the head of the opening that supports the grille curtain and contains the counterbalance springs, if so equipped.

2.4 Bottom Bar: A reinforcing member at the lower edge of the door curtain assembly. It may be provided with an astragal or sensing edge.

2.5 Brackets: Plates bolted to the wall or to extensions of the guide wall angles that serve to support the barrel and form end closures for the hood.

2.6 Counterbalance Assembly: An assembly consisting of torsion springs, spring anchors, and a counterbalance tension shaft, which is positioned inside the barrel assembly.

2.7 Curtain: Interlinked rods and links assembled together.

2.8 Curtain Rods: Horizontal rods that when interlinked together with links form the grille curtain.

2.9 Cycle: An action on the grille from the fully closed position, to the fully open position, and returned to the fully closed position.

2.10 Fascia: An optional metal closure used on the backside of the grille, opposite to the coiled curtain.

2.11 Guide: Vertical assembly in which the curtain travels and that is fastened to the jamb, retaining the edges of the grille

curtain and closing the space between the curtain edges and the jamb.

2.12 Hood: An optional sheet metal housing that mounts horizontally between the brackets, serving as an enclosure for the coiled curtain and closing the space between the grille coil and the header.

2.13 Links: Vertical components that when interlinked with curtain rods form the grille curtain.

2.14 Sensing Edge: A device added to the bottom bar of a power operated rolling grille, which stops or reverses the grille curtain upon sensing an obstruction when closing under power.

2.15 Spring Anchor: A component in a counterbalance assembly that holds a spring in place while it is under tension.

2.16 Stops: Bars mounted at top of guides to prevent bottom bar from traveling out of the guides when the curtain is fully raised.

2.17 Tension Wheel: A component attached to the counterbalance tension shaft, which controls the spring tension as it is locked to the bracket.

2.18 Torsion Spring: A helical wound spring in a counterbalance assembly, used to counterbalance the curtain.

3.0 Material Thickness

3.1 Top attachment slats metal gauge shall comply with DASMA TDS-154.

4.0 Guide Assemblies

4.1 Guide assembly design shall allow for installation variances in the distance between left and right guides of $\pm 1/8$ inch (3 mm) within the specified value provided by the grille manufacturer.

4.2 Guide assemblies shall be constructed to support the weight of the grille.

4.3 Guide assemblies shall include curtain stops on the guides to ensure the bottom bar stops at a designated position.

5.0 Curtains

5.1 Curtain rods shall interlink to allow the full range of angular rotation required to wrap around the barrel assembly without binding or separation.

5.2 Curtains shall be designed to resist lateral motion.

5.3 The attachment of the curtain to the barrel and curtain slats shall be designed to not pull apart when subjected to operating forces.

5.4 Steel rods shall conform to ASTM A641, with hot dip zinc coating, with grade chosen by manufacturer to meet performance requirements set forth herein. Steel links shall conform to ASTM A653 or equivalent.

5.5 Stainless steel rods shall conform to ASTM-A240, ASTM A580 or equivalent. Stainless steel links shall conform to ASTM A240.

5.6 Aluminum rods and links shall conform to ASTM -B209, ASTM B-211, ASTM-B221 or equivalent. Rods and links may be anodized. Plastics used in rolling grilles shall meet requirements established by the authority having jurisdiction for flame spread and smoke development.

5.7 Slats used to attach the grille curtain to the barrel assembly may be painted.

5.8 For other materials and finishes, the manufacturer shall be contacted for availability.

5.9 For grilles intended to be automated, rods shall be spaced so as to prevent a $2 \frac{1}{4}$

inch (57 mm) diameter sphere from passing through openings anywhere in the grille.

6.0 Bottom Bars

6.1 A bottom bar may incorporate an astragal or sensing edge for motor operated grilles.

6.2 A bottom bar may be designed to incorporate locks that engage at one or both ends of the bottom bar. If a locking mechanism is incorporated on a motor operated grille, one of the following shall be installed:

6.2.1 An interlock switch, or switches, activated by the lock mechanism.

6.2.2 An operator with the ability to sense either torque or starting current to the motor.

7.0 Brackets

7.1 Brackets shall be designed to support the weight of the barrel assembly and the total curtain assembly weight.

8.0 Hoods

8.1 Hoods, when specified, shall be constructed with gauge thickness in accordance with DASMA TDS-154.

8.2 A hood, or hood fasteners, shall not be in contact with the curtain during any position of the curtain.

9.0 Fascia

9.1 Metal fascia, when specified, shall be constructed with gauge thickness in accordance with DASMA TDS-154.

10.0 Barrel Assemblies

10.1 Torsion Springs

10.1.1 Helical wound spring wire shall comply with ASTM-A229 or equivalent.

10.1.2 Springs shall be designed for a minimum of 10,000 cycles of operation. Spring cycle life shall be determined either through component testing to simulate grille cycling or through grille assembly testing as described in Section 16.1.

10.1.3 The selection of wire size relative to coiled diameter shall be such that mean coil diameter is at least six times the wire diameter.

10.2 Spring Anchors

10.2.1 Spring anchors shall be designed to withstand the radial and lateral forces exerted by the torsion spring to properly retain the spring when fully wound or unwound and allow the application of torque.

10.3 Pipe Deflection

10.3.1 The deflection of the pipe, with the weight of the curtain and counterbalance assemblies applied, shall not exceed .03 inches per foot of length while supported only on both ends.

11.0 Tension Wheels

11.1 Tension wheels and locking mechanism shall be designed with sufficient strength to withstand the maximum torque from torsion springs, and/or winding devices.

12.0 Operation

12.1 A grille normally operated by chain hoist shall not require more than 35 pounds (156 N) of force to operate the grille.

12.2 A grille normally operated by using a crank shall not require more than 25 pounds (111 N) of force to operate the grille.

12.3 A grille normally operated by manually pushing up the grille shall not

require more than 30 pounds (134 N) of force to operate the grille.

13.0 Installation and General Operation

13.1 The grille manufacturer shall furnish details and instructions for proper installation and general operation. Such instructions shall include warnings relative to the installation and general operation of the grille.

14.0 Maintenance

14.1 The grille manufacturer shall furnish a list of components requiring regular maintenance, with instructions on and frequencies for such maintenance.

15.0 Labels

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

15.2 DASMA labels RDD-201 and RDD-202 or equivalent shall be placed in the immediate vicinity of the grille as described in TDS-267.

15.3 Labels in accordance with the applicable provisions of ANSI-Z535.1, ANSI-Z535.3, ANSI-Z535.4, shall be placed in the immediate vicinity of the grille.

16.0 Durability

16.1 When testing is performed to determine cycle life, testing shall be performed on a complete, installed grille assembly. A cycle measuring device shall be used which shall be operable while the grille moves alternately from the fully open to the fully closed position. The testing shall be conducted until either the desired cycle rating is reached or when failure occurs.

Referenced Standards

ASTM-A229, *Standard Specification for Steel Wire, Oil-Tempered for Mechanical Springs*

ASTM-A240, *Standard Specification for Heating-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications*

ASTM-A580, *Standard Specification for Stainless Steel Wire*

ASTM-A653, *Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process*

ASTM-B209, *Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate*

ASTM-B211, *Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod and Wire*

ASTM-B221, *Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes*

ASTM A641, *Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire*

ASTM F2200, *Standard Specification for Automated Vehicular Gate Construction*

ANSI-Z535.1, *Safety Color Code*

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

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

DASMA TDS-154, *Steel Gauge Chart*

DASMA TDS-267, *Rolling Door Labels*

DASMA TDS-272, *Rolling Door Counterbalancing*

Appendix A: Informational Statements

A.1. Loads are imposed onto the building structure from door weight. The magnitude and location of these loads should be obtained from the manufacturer.

A.2. Similar to rolling steel doors, manual operation of rolling grilles (push up, hand chain or crank to open) is generally heavy in the bottom half to two-thirds of door travel and light for the top third. Refer to DASMA Technical Data Sheet TDS-272 for additional information.



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 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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