



**DASMA**

Door & Access Systems  
Manufacturers Association  
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

# TECHNICAL DATA SHEET

## #155h

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## DASMA GARAGE DOOR WIND LOAD GUIDE BASED ON THE NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE

DASMA (the Door & Access Systems Manufacturers Association) has created a ***GARAGE DOOR WIND LOAD GUIDE*** based on the North Carolina State Residential Code wind load requirements<sup>1</sup>. The guide is intended to be used by code officials, engineers, architects, builders, owners, insurance companies and other interested parties. The Wind Load Guide also references a DASMA test procedure (ANSI/DASMA 108), which may be used by manufacturers to determine structural load performance of a garage door.

The guide is published by the Commercial & Residential Garage Door Division of DASMA, which represents an estimated 95% of all sectional garage doors sold in the United States. The Division's Technical Committee, the best technical talent in the garage door industry, developed these tables based on the latest civil engineering and building code criteria.

The DASMA members believe the ***DASMA GARAGE DOOR WIND LOAD GUIDE*** will improve understanding of the issues related to garage doors and wind loads. DASMA continues to monitor developments regarding wind loads and the building codes in general, and continues to develop solutions to problems which affect the garage door industry. Please contact DASMA for any questions or comments.

<sup>1</sup> Loads for the Garage Door Wind Load Guide are based on Section 4002, Table 4002. A Wind Load Guide based on values in accordance with the Standard Building Code is an acceptable alternative.

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**Note:** Technical Data Sheets are information tools only and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific recommendations for their products and check the applicable local regulations.

This Technical Data Sheet was prepared by the members of DASMA's Commercial & Residential Garage Door Division Technical Committee. DASMA is a trade association comprising manufacturers of rolling doors, fire doors, grilles, counter shutters, sheet doors, and related products; upward-acting residential and commercial garage doors; operating devices for garage doors and gates, sensing devices, and electronic remote controls for garage doors and gate operators; as well as companies that manufacture or supply either raw materials or significant components used in the manufacture and installation of the Active Members' products.

**GARAGE DOOR WIND LOAD GUIDE**  
**North Carolina Residential State Building Code**

| Mean Roof Height        | Door Size          | 90 MPH | 100 MPH | 110 MPH | 120 MPH | 130 MPH |
|-------------------------|--------------------|--------|---------|---------|---------|---------|
| 15 Feet<br>Single Story | Single<br>9' x 7'  | 12.8   | 15.8    | 19.1    | 22.8    | 26.7    |
|                         |                    | -14.5  | -17.9   | -21.6   | -25.8   | -30.2   |
|                         | Double<br>16' x 7' | 12.3   | 15.2    | 18.3    | 21.8    | 25.6    |
|                         |                    | -13.7  | -16.9   | -20.4   | -24.3   | -28.5   |
| 25 Feet<br>Double Story | Single<br>9' x 7'  | 12.8   | 15.8    | 19.1    | 22.8    | 26.7    |
|                         |                    | -14.5  | -17.9   | -21.6   | -25.8   | -30.2   |
|                         | Double<br>16' x 7' | 12.3   | 15.2    | 18.3    | 21.8    | 25.6    |
|                         |                    | -13.7  | -16.9   | -20.4   | -24.3   | -28.5   |
| 35 Feet<br>Triple Story | Single<br>9' x 7'  | 13.4   | 16.5    | 20.0    | 23.8    | 27.9    |
|                         |                    | -15.1  | -18.7   | -22.6   | -26.9   | -31.5   |
|                         | Double<br>16' x 7' | 12.8   | 15.8    | 19.1    | 22.8    | 26.7    |
|                         |                    | -14.3  | -17.6   | -21.3   | -25.4   | -29.8   |

Design pressures above are in Pounds per Square Foot (PSF)

Testing, if required by local authority, may be performed to ASTM E-330, or preferably ANSI/DASMA 108, with acceptance criteria in accordance with ANSI/DASMA 108.

**Test conditions:**

- Garage doors shall be tested to both negative and positive pressures. Doors shall be installed simulating normal conditions (i.e., top roller in track radius, other rollers in tracks, all hinges in place, reinforcing hardware in place)
- Test durations for each test direction shall be as follows:
  - 10 seconds at design pressure.
  - 10 seconds at 1.5 times the design pressure.

Standard engineering principles may be used to interpolate or extrapolate test results to door sizes not specifically tested. Doors shall include a manufacturer's label certifying compliance to specific load.

This guide is provided for reference purposes only. In all cases the local building authority is the sole and final determiner of the structural and safety requirements, and suitability of the garage door.

**Notes:**

- Basic Wind Speeds above are three second peak gust values
- Negative pressures assume door has 2 feet of width in building's end zone.
- For 15' mean roof height, multiply by 1.21 for Exposure C values, and by 1.47 to get Exposure D values
- For 35' mean roof height, multiply by 1.38 for Exposure C values, and by 1.63 to get Exposure D values
- Installation details vary. Consult manufacturer's instructions.
- Doors larger than 100 square feet should use the 16 x 7 loads. Doors less than 100 square feet may be interpolated.
- Garage doors evaluated as Components and Cladding, Exposure B.
- For 25' mean roof height, multiply by 1.34 for Exposure C values, and by 1.60 to get Exposure D values
- Garage doors evaluated as attached to enclosed buildings with a Use Factor of 1.0.

**For more information, contact DASMA, 1300 Sumner Avenue, Cleveland OH 44115-2851**  
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