



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#155I

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DASMA Garage Door and Commercial Door Wind Load Guide Based on the 2000, 2003, 2006 and 2009 International Building Codes (IBC) *

DASMA (the Door & Access Systems Manufacturers Association) has created a **GARAGE DOOR WIND LOAD GUIDE** based on the 2000, 2003, 2006 and 2009 International Building Code wind load requirements¹. 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.

¹ Wind Loads for the Garage Door Wind Load Guide were calculated using the following variables:

- Basic Wind Speed Map based on 3 Second Peak Gust
- Height and Exposure Adjustment Coefficients
- Importance Factors (charts use 1.0)
- Components and Cladding Loads

* For the 2003 and later editions of the IBC, TDS-155k may be useful since load determination is in accordance with a list of reference options including ASCE 7.

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
BASED ON THE 2000, 2003, 2006 AND 2009 INTERNATIONAL BUILDING CODES, EXPOSURE B

Mean Roof Height	Door Size	85 MPH	90 MPH	100 MPH	110 MPH	120 MPH	130 MPH	140 MPH	150 MPH
15 Feet Single Story	Single 9' x 7'	11.5	12.8	15.9	19.2	22.9	26.9	31.2	35.7
		-13.1	-14.8	-18.2	-22.0	-26.3	-30.8	-35.8	-41.0
	Double 16' x 7'	11.1	12.4	15.3	18.5	22.0	25.9	30.0	34.4
		-12.4	-13.8	-17.0	-20.7	-24.5	-28.8	-33.5	-38.3
25 Feet Double Story	Single 9' x 7'	11.5	12.8	15.9	19.2	22.9	26.9	31.2	35.7
		-13.1	-14.8	-18.2	-22.0	-26.3	-30.8	-35.8	-41.0
	Double 16' x 7'	11.1	12.4	15.3	18.5	22.0	25.9	30.0	34.4
		-12.4	-13.8	-17.0	-20.7	-24.5	-28.8	-33.5	-38.3

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:

1. 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)
2. Test durations for each test direction shall be as follows:
 - A. 10 seconds at design pressure.
 - B. 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.
- Garage doors evaluated as attached to enclosed buildings with a Use Factor of 1.0.
- Single Story Buildings: Multiply table values by 1.21 to obtain Exposure C values and by 1.47 to obtain Exposure D values
- Double Story Buildings: Multiply table values by 1.35 to obtain Exposure C values and by 1.61 to obtain Exposure D values
- For buildings representing a substantial hazard to human life in the event of failure, or buildings designated as "essential facilities", tabulated wind load values are to be multiplied by a factor of 1.15.
- 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
- Installation details vary. Consult manufacturer's instructions.

For more information, contact DASMA, 1300 Sumner Avenue, Cleveland OH 44115-2851
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COMMERCIAL DOOR WIND LOAD GUIDE
BASED ON THE 2000, 2003, 2006 AND 2009 INTERNATIONAL BUILDING CODES, EXPOSURE B

Mean Roof Height	Door Size	85 MPH	90 MPH	100 MPH	110 MPH	120 MPH	130 MPH	140 MPH	150 MPH
15 Feet	8' x 8'	10.3	11.6	14.3	17.3	20.6	24.2	28.1	32.2
		-11.8	-13.3	-16.4	-19.8	-23.6	-27.7	-32.2	-36.9
	10' x 10'	10.0	11.2	13.8	16.7	19.8	23.3	27.0	31.0
		-11.1	-12.4	-15.3	-18.6	-22.1	-25.9	-30.1	-34.5
	14' x 14'	10.0	10.8	13.3	16.1	19.2	22.5	26.1	30.0
		-10.7	-12.0	-14.8	-17.9	-21.4	-25.1	-29.1	-33.4
25 Feet	8' x 8'	10.3	11.6	14.3	17.3	20.6	24.2	28.1	32.2
		-11.8	-13.3	-16.4	-19.8	-23.6	-27.7	-32.2	-36.9
	10' x 10'	10.0	11.2	13.8	16.7	19.8	23.3	27.0	31.0
		-11.1	-12.4	-15.3	-18.6	-22.1	-25.9	-30.1	-34.5
	14' x 14'	10.0	10.8	13.3	16.1	19.2	22.5	26.1	30.0
		-10.7	-12.0	-14.8	-17.9	-21.4	-25.1	-29.1	-33.4

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:

1. 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)
2. Test durations for each test direction shall be as follows:
 - A. 10 seconds at design pressure.
 - B. 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 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.
- Doors evaluated as attached to enclosed buildings with a Use Factor of 1.0.
- 15' Height Buildings: Multiply table values by 1.21 to obtain Exposure C values, and by 1.47 to obtain Exp. D values.
- 25' Height Buildings: Multiply table values by 1.35 to obtain Exposure C values, and by 1.61 to obtain Exp. D values.
- Buildings evaluated as having roof slopes less than 10 degrees.
- For buildings representing a substantial hazard to human life in the event of failure, or buildings designated as "essential facilities", tabulated wind load values are to be multiplied by a factor of 1.15.
- Doors larger than 196 square feet should use the 14 x 14 loads. Doors less than 196 square feet may be interpolated.
- Doors evaluated as Components and Cladding
- Installation details vary. Consult manufacturer's instructions.

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