DASMA
Door & Access Systems
Manufacturers Association
International

1300 Sumner Avenue
Cleveland, Ohio 44115-2851
Phone: 216-241-7333 • Fax: 216-241-0105
E-mail: dasma@dasma.com

Residential and Commercial Wind Load Guides

DASMA has developed, and continues to develop, a number of resources to assist those connected with the building industry by clarifying the relationship between wind loads and large doors such as garage doors and rolling doors. These resources are intended to aid in the process of specifying these types of doors for buildings, which would result in effective resistance to required wind loads in specific applications.

One prominent approach DASMA has taken is to publish documents that contain wind loads specific to garage doors and rolling doors. The first such "wind load guide" was based on the wind load provisions of the Standard Building Code, because of the high susceptibility to hurricane-induced high wind events in the areas that predominantly adopt and enforce the SBC. Because DASMA recognized that non-tornadic high wind events could occur anywhere in the U.S., subsequent wind load guides have been released based on other U.S. building codes. Residential guides are associated with doors mounted on buildings with roof slopes of 10 degrees (2:12) and greater, while commercial guides are associated with doors mounted on buildings with roof slopes of less than 10 degrees (often flat.)

Many of the guides for a particular code are subdivided by "Exposure" categories. Pre-1999 codes and standards define these "Exposures" as follows (source: ASCE 7-93):

B: Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.
C: Open terrain with scattered obstructions having heights generally less than 30 feet.
D: Flat, unobstructed areas exposed to wind flowing over large bodies of water.

Exposure conditions C and D were redefined with the publication of ASCE 7-98. In that document, shorelines in hurricane-prone areas became classified as "Exposure C", and shorelines qualifying as Exposure D were more clearly described (inland waterways, the Great Lakes and coastal areas of California, Oregon, Washington, and Alaska.) ASCE 7-10 once again included the Gulf and ocean shorelines as Exposure D.

Beginning with ASCE 7-05, Exposures B and D have been given measurable definitions while Exposure C "shall apply for all cases where Exposures B and D do not apply". Because so many buildings qualify as Exposure B (as many as 80% per ASCE 7), consideration should be given to evaluating the potential for using Exposure B, particularly with respect to one- and two family dwelling construction, before conservatively using Exposure C without site evaluation.

DASMA is committed to accurate and complete information that can be understood by all interested parties, along with a dedication to a nationwide view concerning their products. Furthermore, DASMA is committed to keeping abreast of continued code development by updating and creating "wind load guide" information whenever needed.

DASMA has chosen various noteworthy standards and local, state and model building codes on which to base development of residential and commercial "wind load guides", as follows: (Click on a code to view the Wind Load Guide related to that code)

h.   North Carolina Residential State Building Code

k.   ASCE 7-98/ASCE 7-02/ASCE 7-05

l.   2000/2003/2006/2009 International Building Codes (IBC)

m.   2000/2003/2006/2009/2012 International Residential Codes (IRC)

r.   2005 National Building Code of Canada

s.   ASCE 7-10

t.   2010/2014 Florida Building Code

u.   Garage Door and Commercial Door Wind Load Guide Based on the 2010 National Building Code of Canada

v.   ASCE 7-16

NOTE: Except for TDS-155s, TDS-155t and TDS-155v, wind load values shown in the above tables are based on buildings with an "importance factor" of 1.0. 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. Descriptions of some of these types of buildings can be found in the referenced documents.