



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#1502

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The International Residential Code and Wind Load Labels

Background

The International Residential Code (IRC) is a model building code developed by the International Code Council (ICC). It was first published in 2000, and is updated every three years. The 2021 edition of the IRC has been adopted in many states, counties, and cities. It is available for public viewing online.

1. What does this mean for garage doors?

Beginning with the 2021 IRC a new labeling requirement has been added for all garage doors.

2. What is the requirement?

From chapter 6 of the code:

***R609.4 Garage doors.** Garage doors shall be tested in accordance with either ASTM E330 or ANSI/DASMA 108 and shall meet the pass/fail criteria of ANSI/DASMA 108.*

***R609.4.1 Garage door labeling.** Garage doors shall be labeled with a permanent label provided by the garage door manufacturer. The label shall identify the garage door manufacturer, the garage door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard.*

3. Is this new?

The labeling provision is new with the 2021 I-codes, but the wind load resistance and testing requirements are not new. Since the 2000 I-codes the basic wind speed requirement has not been less than 85 mph in any region of the U.S. The testing requirement for garage doors has been explicit since the 2006 IRC.

4. Are garage door manufacturers ready to meet this requirement?

Yes. Every major manufacturer offers wind load rated product complete with labels meeting the requirements of R609.4.1.

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.

5. Is third-party labeling or certification required?

No; the code requirement is quoted in full above.

6. Does the label have to be applied at the factory?

No; this is not mentioned in the code text above.

7. What design pressures are required?

The design wind speeds (see IRC Figure R301.2(2)) range from the mid-90s in California, to 170 mph for coastal Louisiana. The resulting design pressures range from 10 psf to over 70 psf.

8. Are all garage doors wind load rated?

No. Garage door manufacturers offer non-rated doors for areas where wind load requirements are not in place.

9. If a garage door is not wind load rated, does it get a wind load label?

No. A wind load label signifies a wind load rating.

10. How do manufacturers know which design pressure rating to provide?

As always, manufacturers need to rely on their dealers and distributors to convey job-specific requirements, as provided by the builder and the Authority Having Jurisdiction (AHJ). The design wind speed is, of course, only one factor.

Other factors include Exposure Category, mean roof height, effective wind area, and wind zone location. Topography is another potential factor. Effective wind area, since it is a direct function of door size, is known by the manufacturer whenever a door is ordered, but the other factors often are not known. Another important factor, also often unknown by the manufacturer, is whether wind-borne debris resistance is required.

In summary, the manufacturer rarely knows the required design pressure rating unless that information is provided during the quoting or ordering process. Refer to DASMA Technical Data Sheet #194 for more information. <https://www.dasma.com/wp-content/uploads/2022/08/TDS194.pdf>

Ultimately, the Authority Having Jurisdiction (AHJ) is the final authority for design pressure and all other wind load questions, as well as enforcement at the time of door installation.

11. Can a garage door manufacturer supply a door rated to a wind speed (mph)?

No. The building code requires design pressure (psf) on the label. See Question #2 and DASMA Technical Data Sheet #194. The design pressure depends on many factors besides wind speed. See Question #10.

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12. What is the minimum design pressure rating manufacturers need to supply?

The minimum design pressure rating is job-specific. It will depend on the factors discussed above. The pressure ratings are based on IRC Table R301.2.1(1), which includes values as low as 10 psf for garage doors. This table forms the basis for the pressure ratings, but the AHJ is the final authority for this requirement.

13. What resources are available for engineers and architects to determine the correct wind speeds and pressures to use for a building?

The wind speed maps are located in Chapter 3 of the IRC, and the basis for the required pressures is found in 2021 IRC Table R301.2.1(1), as noted above. Other resources to consult include DASMA Technical Data Sheet #155 (<https://www.dasma.com/technical-data-sheets/#commercial-residential-garage-doors>) and the ASCE 7 Hazard Tool (<https://asce7hazardtool.online/>

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