



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#177

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Application of Kd Factor to Garage Door Wind Load Determination Using ASCE 7

When calculating wind loads on garage doors using ASCE 7, the directionality factor Kd required to be used shall be 0.85. Following is documentation supporting this assertion.

Calculations

DASMA Technical Research Document #1029 (attached) outlines the method of determining combined nominal loads using allowable stress design based on ASCE 7-98 Section 2.4, specifically addressing wind loads on sectional garage doors, and describes how ASCE 7-98 mandates the use of directionality factor Kd of 0.85 for wind loads on garage doors when using loads determined by Section 2.4.

Using a Kd of 0.85 is also required by ASCE 7-02, 7-05, 7-10, and 7-16. Differences between the standards are as follows:

ASCE 7-02 versus ASCE 7-98

There are three possible load combinations in ASCE 7-02, using Section 2.4, as opposed to two using ASCE 7-98. The three combinations include equations 5, 6 and 7. All values other than dead load and wind load should be set to zero, since they are not applicable to garage doors. Worst case is equation 3, which is the same worst case condition as found in ASCE 7-98.

ASCE 7-05, ASCE 7-10 and ASCE 7-16, versus ASCE 7-98

Content of ASCE 7-05, ASCE 7-10 and ASCE 7-16 is not materially different from ASCE 7-02 regarding this assertion. In ASCE 7-16 Table 26.6-1, it is noted that Kd is to be 0.85 for components and cladding which includes garage doors.

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.