COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

DASMA TECHNICAL DATA SHEET

#184

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Garage Doors and Tidal Surge Related Breakaway Construction

There are instances where a garage door must meet a "breakaway" performance requirement, relating to tidal surges near ocean/ gulf coastlines. This TDS is intended to help clarify the circumstances where this may occur, and the corresponding requirements. Please keep in mind that these "breakaway" conditions are separate and distinct from doors that are required to "breakaway" due to vehicular impact, which are beyond the scope of this document.

Many coastal jurisdictions participate in the National Floor Insurance Program (NFIP), under FEMA, which offers flood insurance to building owners. NFIP regulations include two key sets of criteria that affect whether a garage door could be subject to breakaway design conditions.

1. Areas below the "base flood elevation" (BFE). FEMA defines BFE as the computed elevation to which floodwater is anticipated to rise during an area's base flood. BFEs are shown on Flood Insurance Rate Maps (FIRMs) and on flood profiles. The BFE is the regulatory requirement for the elevation or flood-proofing of structures. The relationship between the BFE and a structure's elevation determines the flood insurance premium.

2. Areas FEMA has designated as a "V-zone". FEMA defines "V-zones" as "Areas along coasts subject to inundation by the 1-percent-annual-chance flood event with additional hazards associated with storm-induced waves". FEMA classifies a V-zone as within a "Coastal High Hazard Area", defined as an area of special flood hazard that extends from offshore to the inland limit of a primary frontal dune along an open coast, and any other area subject to high-velocity wave action from storms or seismic sources.

When garage doors are installed in areas meeting the above criteria, breakaway conditions may override wind load and windborne debris resistance requirements.

Garage doors must be designed to break free under the larger of the design wind load, the design seismic load, or 10 psf, acting perpendicular to the plane of the door. If the loading at which the door is intended to collapse is greater than 20 psf, the door must be designed and certified to collapse under Base Flood conditions.

Garage door manufacturers can coordinate their product installations with individuals involved in the constructing of spaces below elevated buildings. Installations will take into consideration attachments by which garage doors can breakaway and restraints by which garage door components can be kept from being washed from the vicinity of the structure.

A FEMA publication entitled "Enclosures and Breakaway Walls", found at www.fema.gov as a Hurricane Ike Recovery Advisory and dated January 2009, gives specific information on garage door performance requirements and corresponding certification requirements.

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