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Vehicular Access Door Interface with Building Framing

Introduction

Vehicular access doors are typically installed in the building's largest openings and can be subject to high wind events. This Technical Data Sheet describes steps a building design professional should take to ensure that the building framing can adequately support the specified door.

Door Wind Load Performance

Where wind load requirements are specified, the performance of a vehicular access door can be established. The door manufacturer should be able to provide the positive and negative values (in PSF) for which the chosen door is rated. Vehicular access door wind load performance is typically designed per values found in the DASMA Residential and Commercial Wind Load Guides, TDS #155.

Sectional Garage Doors versus Rolling Steel Doors

One key difference between sectional garage doors and rolling steel doors is that rolling steel doors may require the use of "windlocks" to withstand design wind loads. These devices are attached to the door curtains enabling the curtain to "lock" into place in the guides at certain wind load forces, providing added strength. The result is that these forces are transferred through the guides to the jambs of the opening. This additional load must be accounted for in the building framing design. It should be noted that catenary forces computed by rolling slat door manufacturers assume that vertical jambs are rigid. Flexibility of vertical jambs could affect the magnitude of such catenary forces, as well as potentially affecting door performance.

Design Items to Consider

1. Find out which type of vehicular access door is being specified during the design phase.
2. If wind load is specified, obtain the wind load performance data for the door in PSF.
3. If a rolling steel door is specified, find out whether the door is designed with windlocks. If the door is greater than 8 feet wide, chances are the door includes these devices.
4. If a rolling steel door specified includes windlocks, obtain the applied force values from the manufacturer. TDS-251 includes a helpful form manufacturers can use to convey this information.
5. If the type of door being specified during the design phase changes, the building jamb framing should be reanalyzed.
6. If a rolling steel door with windlocks is installed in an opening where any other door type was previously installed, or in a retrofitted opening, the building jamb framing should be analyzed.

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 Rolling 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.