ROLLING DOOR DIVISION
DASMA TECHNICAL DATA SHEET
#251

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

Architects and Designers Should Understand Loads Applied by Rolling Doors

It is important for architects and building designers to understand the loads that rolling doors exert on the wall above the opening and on the jambs. Dead loads include the cantilevered weight of the curtain, counterbalance, hood, operator, and bracket assemblies, and are supported by the wall above the opening. Wind loads result from wind acting on the door curtain and are transmitted to the jambs through the guides.

Wind load on doors creates two forces on the jambs; one perpendicular to the opening, and, in some cases, an additional load that is parallel to the opening. This parallel load is the catenary tension that results when the curtain deflects sufficiently to allow the wind-locks to engage the wind bar in the guide. This force acts to pull the guides toward the center of the opening.

The parallel force depends on several variables, the most prominent of which are the width of the opening and the specified wind load. The door must withstand both positive (pushing into the building) and negative (pulling out of the building) wind loads. Including these forces in the design of the jamb and its supporting structure can help prevent a jamb failure and allow the building to fully withstand its specified wind load requirements.

Contact the rolling door manufacturer for project-specific Guide Data Sheets showing all applied loads. See below for blank forms. For rolling sheet doors, see DASMA Technical Data Sheet TDS 293.

The following four site conditions often cannot accommodate rolling door applied loads and may require further evaluation in consultation with the door manufacturer:

- *Rolling doors with wind-locks and subject to high wind loading, mounted to light gauge, cold-formed steel (CFS) jambs*. The jambs may rotate under wind load allowing the door curtain to be blown out of the guides. Contact the door manufacturer for application-specific recommendations.
- *The wall above the opening is not designed for the door's cantilevered dead load*. Face-of-wall mounted doors can extend above the opening 12 to 36 inches or more, depending on the size of the door. The guide wall angles must be mounted to the wall above the opening to support the door. When the door has a hood to cover the coiled curtain and counterbalance, some provision must be made to fasten the top of the hood and hood supports to the wall.
- *Concrete masonry unit (CMU) wall without sufficient concrete strength*. The design of a reinforced CMU jamb should have at least a 2500 psi rating. Hollow CMU will require through-bolts. Rebar, if present, will have to be avoided during installation of anchors for guide wall angles. See DASMA Technical Data Sheet TDS 259 for more information.
- *Tilt-up concrete panel walls that include steel jambs*. The steel jambs must remain rigid and securely fastened to the wall along the full height of the opening under the loads imposed by the rolling door.

GUIDE DATA SHEET

(Face Mounted Door Without Windlocks)

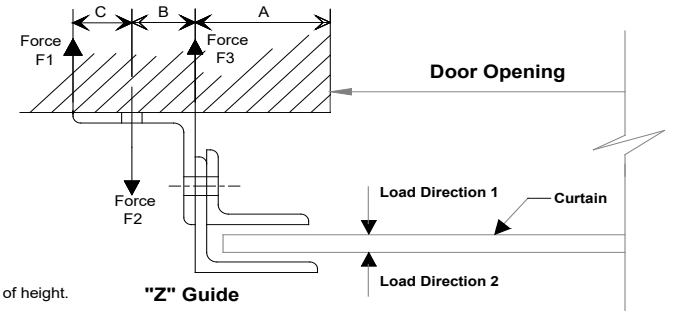
DATE: _____

Door Model: _____ Slat Type: _____ Gauge: _____ Serial No.: _____

Customer: _____ Job: _____

Opening Size: _____ Type of Guide: _____ Windload: _____ P.S.F.

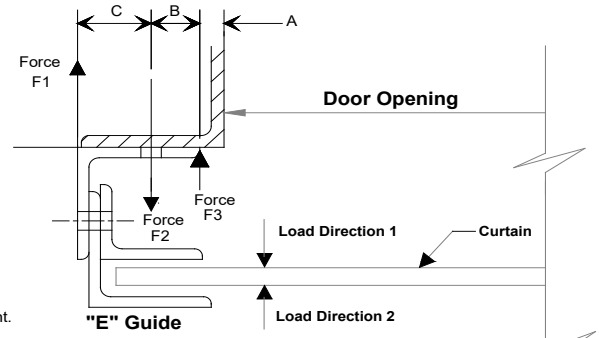
The forces shown below are provided so you can determine that the building jambs are capable to withstand the loads imposed by the rolling door under specified load. These forces impose a load on the building; they are not reactions.



Note: All forces are pounds per foot of height.

"Z" Guide

Windload	A	B	C	F1	F2	F3
Load Dir. 1						N/A
Load Dir. 2				N/A		



Note: All forces are pounds per foot of height.

"E" Guide

Windload	A	B	C	F1	F2	F3
Load Dir. 1						N/A
Load Dir. 2				N/A		

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See Page 2 of Guide Data Sheet

GUIDE DATA SHEET

(Face Mounted Door With Windlocks)

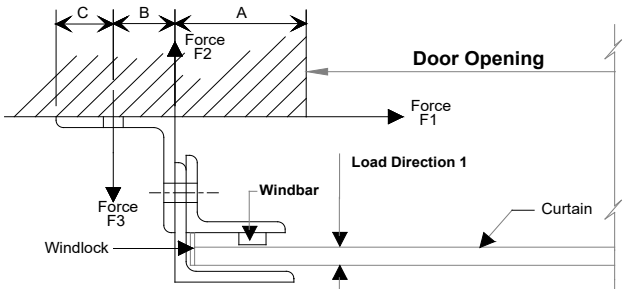
DATE: _____

Door Model: _____ Slat Type: _____ Gauge: _____ Serial No.: _____

Customer: _____ Job: _____

Opening Size: _____ Type of Guide: _____ Windload: _____ P.S.F.

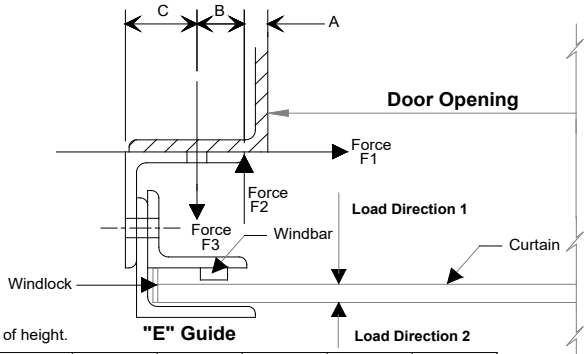
The forces shown below are provided so you can determine that the building jambs are capable to withstand the loads imposed by the rolling door under specified load. These forces impose a load on the building; they are not reactions.



"Z" Guide

Note: All forces are pounds per foot of height.

Windload	A	B	C	F1	F2	F3
Load Dir. 1						
Load Dir. 2						



"E" Guide

Note: All forces are pounds per foot of height.

Windload	A	B	C	F1	F2	F3
Load Dir. 1						
Load Dir. 2						

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GUIDE DATA SHEET

(Between-Jamb Mounted Doors Without Windlocks)

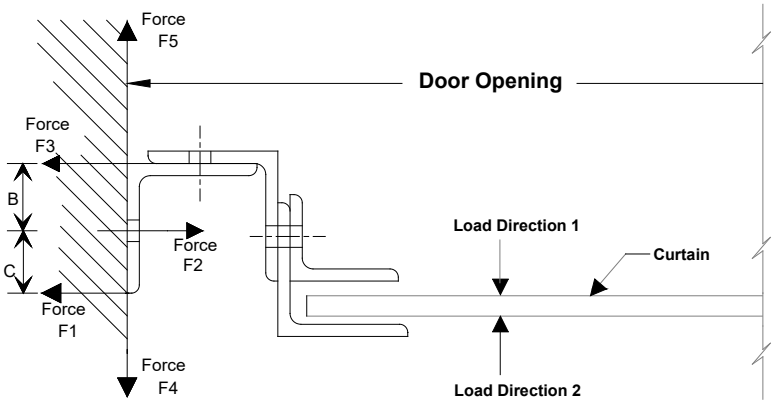
DATE: _____

Door Model: _____ Slat Type: _____ Gauge: _____ Serial No.: _____

Customer: _____ Job: _____

Opening Size: _____ Windload: _____ P.S.F.

The forces shown below are provided so you can determine that the building jambs are capable to withstand the loads imposed by the rolling door under specified load. These forces impose a load on the building; they are not reactions.



Note: All forces are pounds per foot of height.

Windload	B	C	F1	F2	F3	F4	F5
Load Dir. 1					N/A		N/A
Load Dir. 2			N/A			N/A	

See Page 2 of Guide Data Sheet

GUIDE DATA SHEET

(Between-Jamb Mounted Doors With Windlocks)

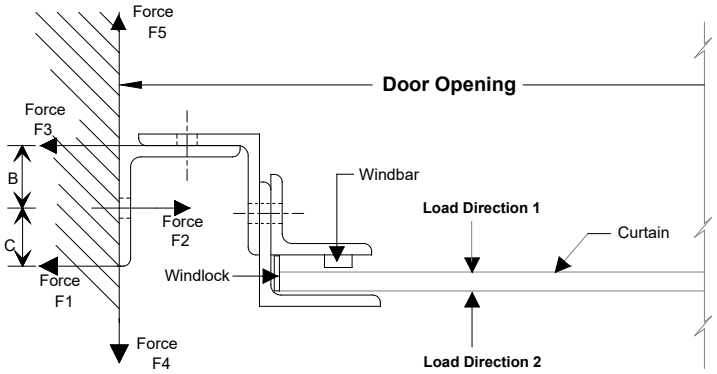
DATE: _____

Door Model: _____ Slat Type: _____ Gauge: _____ Serial No.: _____

Customer: _____ Job: _____

Opening Size: _____ Windload: _____ P.S.F.

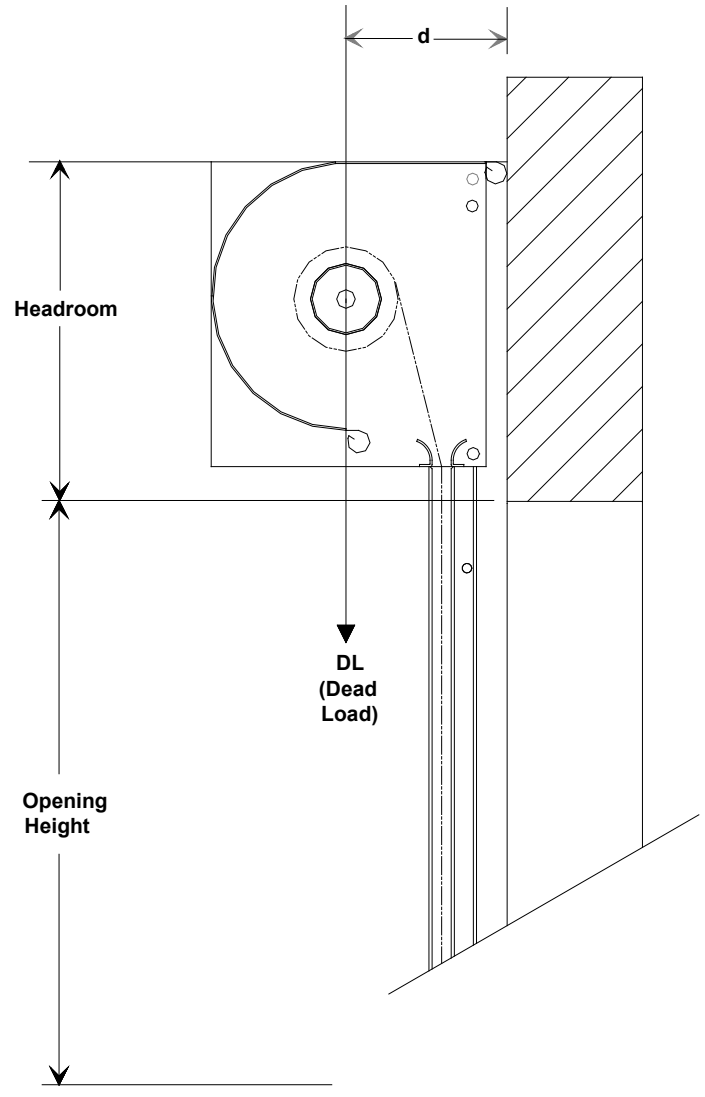
The forces shown below are provided so you can determine that the building jambs are capable to withstand the loads imposed by the rolling door under specified load. These forces impose a load on the building; they are not reactions.



Note: All forces are pounds per foot of height.

Windload	B	C	F1	F2	F3	F4	F5
Load Dir. 1					N/A		N/A
Load Dir. 2			N/A			N/A	

See Page 2 of Guide Data Sheet



Opening Height	DL (lbs.)	Headroom	d

Page 2 (Applies to Doors With and Without Wind-locks)