Common Jamb Construction for Rolling Fire Doors: Masonry Construction - Bolted and Welded Guides

Introduction

Rolling fire doors are tested by being mounted to a furnace which is in compliance with Underwriters Laboratories requirements. The doors are mounted on the jambs of a wall intended to replicate field construction. The fire door guides must remain securely fastened to the jambs at the end of fire test. This DASMA Technical Data Sheet includes a representation of masonry jamb construction and guide attachment details. Guide configurations and approved jamb construction will vary with individual fire door manufacturer's listings. Consult with individual manufacturers for specific guide details and their approved jamb constructions.

Objectives

The objectives of preparing the set of standard details are as follows:

1. To show how fire door guide assemblies are located on the jamb for face of wall mounting and between jamb mounting.
2. To provide recommendations for rebar locations in jambs.
3. To help architects, engineers and others involved with building specifications understand the relationship between the rolling steel fire door guides and the jamb/wall design.
4. To help door dealers and distributors know the limitations for welding guide angles to steel jambs.
5. To have the details included in applicable reference documents used by architects, engineers, specifiers and code officials.

Special Notations

1. UL has approved the welded guide details ONLY AS SHOWN.
2. FM does not allow guides to be welded to steel jambs.

See the following pages for a list of standard jamb construction details.
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Standard Jamb Construction:

Rolling Fire Doors
On Masonry Walls

Bolted and Welded Guides

General Notes:

1. Existing and new wall construction covered
2. Details are for general information only
3. Consult a structural engineer for actual wall construction
4. Details are attachments to TDS-261
List of Standard Jamb Construction Details
(Rolling Fire Doors: Masonry Construction - Bolted and Welded Guides)

Figure 1.  Preferred CMU Reinforcement Detail
Figure 2.  Preferred Brick/Concrete Reinforcement Detail
Figure 3.  Face-mounted “Z” guide configuration; bolted connection; hollow block
Figure 4.  Face-mounted “Z” guide configuration; bolted connection; filled block
Figure 5.  Face-mounted “Z” guide configuration; bolted connection; brick or poured concrete
Figure 6.  Face-mounted “E” guide configuration; fastened or welded connection; steel bent plate at jamb; brick or poured concrete
Figure 7.  Face-mounted “E” guide configuration; fastened or welded connection; steel angle at jamb; brick or poured concrete
Figure 8.  Face-mounted “E” guide configuration; fastened or welded connection; structural steel channel at jamb; brick or poured concrete
Figure 9.  Face-mounted “E” guide configuration; fastened or welded connection; steel angle at jamb; filled block
Figure 10. Jamb-mounted “Z” guide configuration; bolted connection; filled block
Figure 11. Jamb-mounted “Z” guide configuration; bolted connection; brick or poured concrete
Figure 12. Jamb-mounted “Z” guide configuration; fastened or welded connection; structural steel channel at jamb; brick or poured concrete
Figure 13. Jamb-mounted “Z” guide configuration; fastened or welded connection; steel bent plate at jamb; brick or poured concrete
Figure 14. Section view, face-mounted welded guide wall angle
Figure 15. Section view, jamb-mounted welded guide wall angle

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.

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Common Jamb Construction for Rolling Fire Doors For Maximum 4 Hour Rating

Figure 1
Preferred CMU Reinforcement Detail
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Figure 2
Preferred Brick/Concrete Reinforcement Detail

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Figure 3
Face-mounted "Z" configuration;
bolted connection; hollow block

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Rebar, Typical
CMU Filled with min. 2500 psi Concrete

Figure 4
Face-mounted "Z" configuration;
bolted connection; filled block

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Figure 5
Face-mounted "Z" configuration;
bolted connection; brick or concrete

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Figure 6
Face-mounted "E" configuration;
fastened or welded connection; steel bent plate at jamb;
brick or concrete

Notes:
1. For doors mounted to a steel plate member, this plate member must be embedded, or secured to the masonry wall. Plate must be designed to have an expansion gap equal to 1/8" for each foot of opening height in order to be suitable for welding guide angle to jamb.
2. For doors mounted to steel, when this steel stops at the header, metal shims must be inserted between the guide wall angle and the wall above the opening.

Min. 3/16" Dia. Fasteners or Weld* as shown in Section A-A, Figure 14.

* UL listed products only

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Face-mounted "E" configuration;
fastened or welded connection; steel angle at jamb;
brick or concrete

Min. 3/16" Thick
Steel Angle, with
Welded Studs or equivalent,
by others

Min. 3/8" Dia. Fasteners
or Weld* as shown in
Section A-A, Figure 14.

Brick, or min. 2500 psi
Concrete (shown)

Note: For doors mounted to a steel angle, this
angle must be embedded, or secured to the
masonry wall. Angle must be designed to have
an expansion gap equal to 1/8" for each foot of
opening height in order to be suitable for
welding guide angle to jamb.

Figure 7
Face-mounted "E" configuration;
fasted or welded connection; steel angle at jamb;
brick or concrete

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![Diagram]

Min. 3/16" Thick Structural Steel Channel, with Welded Studs or equivalent, by others

Brick, or min. 2500 psi Concrete (shown)

Min. 3/8" Dia. Fasteners or Weld* as shown in Section A-A, Figure 14.

* UL listed products only

Notes:
1. For doors mounted to a steel channel, this channel must be embedded, or secured to the masonry wall. Channel must be designed to have an expansion gap equal to 1/8" for each foot of opening height in order to be suitable for welding guide angle to jamb.
2. For doors mounted to steel, when this steel stops at the header, metal shims must be inserted between the guide wall angle and the wall above the opening.

Figure 8
Face-mounted "E" configuration;
fastened or welded connection; structural steel channel at jamb;
brick or concrete

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8/6/01  rev. 10/11  rev. 6/16 Page 11 of 18 This sheet is reviewed periodically and may be updated. Visit www.dasma.com for the latest version.
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For Maximum 4 Hour Rating

Notes:
1. For doors mounted to a steel angle, this angle must be embedded, or secured to the masonry wall. Angle must be designed to have an expansion gap equal to 1/8" for each foot of opening height in order to be suitable for welding guide angle to jamb.

2. For doors mounted to steel, when this steel stops at the header, metal shims must be inserted between the guide wall angle and the wall above the opening.

Figure 9
Face-mounted "E" configuration; fastened or welded connection; steel angle at jamb; filled block

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Figure 10
Jamb-mounted "Z" configuration; bolted connection; filled block

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Figure 11
Jamb-mounted "Z" configuration;
bolted connection; brick or concrete

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Min. 3/16" Structural Steel Channel
with Welded Studs or equivalent, by others

Min. 3/8" Dia. Fasteners
or Weld* as shown in
Section B-B, Figure 15.

* UL listed products only

Notes:
1. For doors mounted to a steel channel, this
channel must be embedded, or secured to the
masonry wall. Channel must be designed to
have an expansion gap equal to 1/8" for each
foot of opening height in order to be suitable for
welding guide angle to steel jamb.
2. For doors mounted to steel, when this steel
stops at the header, metal shims must be
inserted between the guide wall angle and the
wall above the opening.

Figure 12
Jamb-mounted "Z" configuration;
fastened or welded connection; structural steel channel at jamb;
brick or concrete

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Notes:
1. For doors mounted to a steel plate, this plate must be embedded, or secured to the masonry wall. Plate must be designed to have an expansion gap equal to 1/8" for each foot of opening height in order to be suitable for welding guide angle to steel jamb.
2. For doors mounted to steel, when this steel stops at the header, metal shims must be inserted between the guide wall angle and the wall above the opening.

Figure 13
Jamb-mounted "Z" configuration; fastened or welded connection; steel bent plate at jamb; brick or concrete

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Min. 3/16" Thick Steel Angle, Bent Plate, or Structural Channel (By Others)

Note: Use E6010/E6011 Electrodes or Electrodes of Equivalent Strength

Face of Jamb Mounted Guide Wall Angle

Between Slot Spacing

Length of One Side of Slot

T = Wall Angle Thickness

Figure 14
(Section A-A)
Face of Jamb Welded Guide Wall Angle (UL listed products only)
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Common Jamb Construction for Rolling Fire Doors

Figure 15
(Section B-B)
Between Jamb Welded Guide Wall Angle (UL listed products only)

Note: Use E6010/E6011 Electrodes or Electrodes of Equivalent Strength

T = Jamb Angle Thickness

Length of One Side of Slot

Jamb Angle

Steel Jamb

Between Slot Spacing

T 1 1/2

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