FRAME COMPONENTS

Fleming frame products, from the simplest frame to the most complicated window, are constructed of formed steel components. Each component can be identified by its placement in the finished assembly and the builders’ hardware it is prepared to receive.

Three-sided frames for single doors are the most basic units. As shown below, they are constructed from 3 components: a hinge jamb, a strike jamb and a head. The jambs are handed to suit the swing of the door.

Three-sided frames for pairs of doors also contain 3 components: 2 hinge jambs and a head as shown below. The hinge jambs, as indicated, are handed for the swing of each door.

When a four-sided frame for singles or pairs is required, a bottom member, called a sill, is added to connect the 2 jambs.
All the components in frames for simple singles or pairs are constructed with “open sections”. An open section is one that contains a throat opening into which a wall can be inserted. These occur at the perimeter of the frame.

Transom, sidelight and window frames are built with open sections (jambs, head and sills) at the perimeter and “closed sections”, creating the individual door and/or glass openings required.

There are a number of closed sections available which include mullions, center rails and corner posts as shown below.

The following drawing below shows various open and closed sections assembled into a finished sidelight frame.
PROFILE TYPES

Components also have a set of terms to describe their basic shape or profile. Those utilized by the majority of North American manufacturers and Fleming are detailed on the following pages.

**Masonry Profile** components are the most common open sections. Illustrated to the left below, as the term suggests, they are utilized mostly in unit masonry or concrete walls. The contractor generally requires masonry profile frames as soon as the foundations are complete as they are installed with the wall.

Masonry profile frames are available as set-up and welded or knocked-down (for field assembly) construction. They can also be used in drywall or plaster and stud partitions and should be available to the contractor before the walls are constructed. Masonry profiles can include a number of variations as discussed below.

**Double Rabbet** masonry profiles are standard for Fleming F, Miter and Notch and Stick-Series welded or knocked-down product. They are designed to accommodate a door or glazing materials on either side of the profile. Double rabbet profiles are available in both open sections and closed sections as illustrated below.

**Single Rabbet** profiles are the first variation in custom product and have provision for a door or glazing materials on one side of the frame only. Below are a typical open section and a single rabbet mullion.

**Drywall Profile** open sections, shown on the next page, can be used when drywall is the final layer of material on the wall. This is the second most common profile in commercial steel frame product. This profile adds legs, called “drywall returns”, formed parallel to the wall, inside the profile, which protect the drywall.
Drywall profile frames are available as set-up and welded or knocked-down drywall construction. Welded drywall profile frames should be on site to be installed with the walls. Knocked-down drywall frames are installed after the steel or wood studs and drywall partitions are finished. Double rabbet knocked-down drywall frames, the DW-Series, are also a standard profile for Fleming.

Cased Open profiles are a custom variation. This profile is generally used simply as a finishing element trimming an opening in a wall. Cased open frames are not normally prepared for doors. With certain types of hinges or pivots these sections can be used as double acting frames. Cased open knocked-down drywall profile is standard for Fleming’s CODW-Series.

Double Egress profiles are used in frames designed to permit each leaf in a pair to swing in the opposite direction. A plan view of the frame and typical double egress masonry and drywall profile jambs are shown below.
PROFILE TERMINOLOGY

Over the years terminology has evolved to describe each of the formed elements of open and closed sections. Industry has adopted a number of different terms. The most widely accepted and those used by Fleming, are shown on the following pages.

**Jamb Depth**: The distance on a frame section measured from face to face, perpendicular to the face of the door.

Fleming masonry profile frame components (F, DE, A, TB, FS, FSS, M&N and ST-Series) are available in standard jamb depths of 4-3/4" (121), 5-3/4" (146), 6-3/4" (172), 7-3/4" (197) and 8-3/4" (222). Our knocked-down drywall profile MD-Series frame is available in 5-3/4" (146) jamb depth.

Knocked-down drywall (DW-Series) frame standards include 4-1/2" (114), 4-3/4" (121), 5-5/8" (143), 5-7/8" (149), 6-1/4" (159), 6-5/8" (168), 7-1/8" (181), 7-3/4" (197), 8-1/4" (210) and 9-1/2" (241) jamb depths to suit most steel or wood stud and drywall installations.

Non-standard jamb depths are available to suit special conditions. For fire labeled product, refer to Fleming’s Fire Labeling Specifications to determine minimum and maximum jamb depths permitted.

**Face**: The portion of the exposed frame section which runs parallel to the wall on the door side of the section.

The industry and Fleming’s standard is 2" (50mm) for jambs, heads and mullions. Masonry profile heads (F, M&N and ST-Series) are also available standard with a 4" (100mm) face. For M&N and ST-Series center rails 6" (150), 8" (200) and 12" (300) are the standards. M&N and ST-Series standard sill sizes include 6-13/16" (175), 8" (200) and 8-13/16" (225) faces. Fleming Trimwall Series jamb and mullion sections have 5/8" (16) faces.

Typical non-standard face widths include 1-1/4" (32), 1-1/2" (38) and 1-3/4" (45).

For fire labeled product, when surrounding a door opening, the minimum face allowed is 1-1/4" (32). When only glazing materials are installed in the component, the minimum is reduced to 1" (25). The maximum face for fire labeled product is 12" (305).
**Opposite Face**: The portion of the exposed frame section which runs parallel to the wall on the non-door side.

On standard masonry and drywall, double rabbet profile components the opposite face matches the face on the door side. To meet specific architectural requirements, non-standard profiles can be provided where the faces are not equal.

**Return**: The portion of an open frame section extending back from the faces, perpendicular to the wall surface.

Except for 5-3/4” (146) jamb depth masonry profile product (F, DE, TB, ST, M&N and FSS-Series), the standard return dimension is 1/2” (12.7). The 5-3/4” (146) F, DE, TB, ST, M&N and FSS-Series product have 7/16” (11.1) returns which creates a 4-7/8” (123.8) throat opening to wrap walls constructed with a single layer of 5/8” (16) drywall on each side of 2” x 4” (38 x 89) wood studs or 3-1/2” (89) steel studs. These are two of the most common walls in commercial construction.

Non-standard returns from 1/4” (6.4) to 3/4” (19.1) on either side are available. When returns are provided on fire labeled product, these are the minimum and maximum sizes permitted.
**Drywall Return**: The portion of an open section formed inside the profile, parallel to the wall.

In set-up and welded frames the drywall is secured to the studs after the frame has been installed. The drywall returns allow the boards to be slid into position without tearing or marring the board.

For knocked-down drywall frames (DW-Series) the drywall is attached to the studs before the frame is installed. The drywall returns in this application permit the frame to be pushed over the partition without damaging the board.

Fleming’s standard drywall return measures 3/8” (9.5). Non-standard drywall returns from 1/4” (6.4) to 3/4” (19.1) are available.

**Throat Opening**: The area in the back of an open section into which a wall could be inserted.

The size of the throat opening is dependent on the actual wall thickness, the type of frame and installation method required.

For masonry, concrete or drywall partitions where a welded or knocked down frame wraps the wall, the throat opening should be 1/8” (3) larger than the actual wall thickness. The gap between the frame and the partition is sealed with caulking materials.

Where drywall partitions and knocked-down slip on frames are specified, the throat opening should be equal to the actual wall thickness.
**Door Rabbet**: The portion of the frame section in which the hinge or strike are mortised or where glazing materials or panels are located.

There are two standard door rabbet sizes. For 1-3/4" (44) thick doors the door rabbet is 1-15/16" (49.2) or 1-9/16" (39.7) for 1-3/8" (35) doors. On double egress profiles, 1-3/4" (44) thick doors require a door rabbet of 2" (50.8).

**Opposite Rabbet**: In a double rabbet section, the recess in the profile which is not prepared for hardware, glazing materials or panels.

For Fleming product the opposite rabbet in frames for 1-3/4" (44) thick doors is 1-9/16" (39.7). Where 1-3/8" (35) thick doors are required, the Fleming opposite rabbet is 1-15/16" (49.2). These are called “unequal rabbet” profiles.

A communicating frame (a double rabbet frame prepared to receive a door in each rabbet) with doors of the same thickness is called an “equal rabbet” frame.
**Soffit**: The portion of the section which connects the stops on a double rabbet profile or connects the stop and the opposite face on a single rabbet section.

For Fleming standard product, door and opposite rabbets are fixed dimensions and the soffit size varies with jamb depth. For fire rated product the minimum soffit dimension is 1" (25mm).
Stop: The portion of the section which connects the door or opposite rabbet to the soffit. On the door side of the profile, the part against which the door closes. Also called the “Stop Height”.

The standard stop for Fleming commercial product is 5/8” (16). This is the minimum for fire labeled frames.

Reveal: The portion of a double egress hinge jamb profile which connects the door rabbet to the door reveal. For Fleming product this dimension is 5/8” (16). Again, this is the minimum for fire rated product.

Reveal Rabbet: The portion of a double egress hinge jamb profile which connects the reveal to the face. Because double egress doors are centered on the jamb depth, the reveal rabbet and the soffit are equal in size.
**Backset**: The distance in the door rabbet from a cutout, for a hardware preparation, to the stop. For Fleming, 4-1/2” (114.3) hinges and ASA (4-7/8” x 1-1/4” lipped) strikes have a standard backset of 3/8” (9.5).

**Gage**: A numeric designation used to define the nominal thickness of steel. Fleming standard F, Miter and Notch, Stick, KD-DW and A-Series frames are manufactured from 16 gage galvanneal steel. Non-standard frames are available in 12, 14, 16 and 18 gage galvanneal. The lower the number, the thicker the steel.

The nominal thickness includes the zinc-iron alloy on galvanneal steel. The nominal thickness of the same gage of galvanneal and stainless steel are different. The table below shows the standards used by Fleming and steel mills throughout North America.

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