MASONRY WALL ANCHORS

Two types of anchors are used to secure frame product in new unit masonry walls: wire or bridge and strap fire anchors.

These anchors are embedded into the horizontal mortar joints between courses, as the wall is built-up around the frame. The number of anchors per jamb is dependent on the frame height not the anchor type. Industry and Fleming standards are as shown below.

<table>
<thead>
<tr>
<th>Maximum Frame Rabbet Height</th>
<th>Quantity of Anchors Per Jamb</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'0” (1520mm)</td>
<td>2</td>
</tr>
<tr>
<td>7'6” (2280mm)</td>
<td>3</td>
</tr>
<tr>
<td>10'0” (3040mm)</td>
<td>4</td>
</tr>
<tr>
<td>12'0” (3800mm)</td>
<td>5</td>
</tr>
</tbody>
</table>

Wire anchors are the most versatile and commonly used. These anchors are manufactured from malleable steel, drawn into a loop. The open ends can be bent to suit any jamb depth. Wire anchors are shipped loose to the job site and installed by the contractor.

Wire anchors can be used in all non-rated fire door frame product, frames up to 96” x 96” (2450 x 2450) with up to 1-1/2 hour fire ratings and 3/4 hour fire rated sidelight and window assemblies up to 96” (2450) width or 98” (2500) height.

Butted Application  Wrap Application

Brick and Block Wrap Application
Bridge and strap fire anchors are used exclusively in fire rated frame product. This type of anchor is used only for fire rated: 3 hour frames and transom frames, any frames over 96" x 96" (2450 x 2450) and all transom frames, sidelight or window units exceeding 96" (2450) width or 98" (2500) height.

As shown below the bridge of the anchor is welded inside the soffit of the jamb either at the factory or the listed distributor’s shop. The strap slides up and down the bridge to allow for placement within the horizontal mortar joints.

This type of anchor can be used with all jamb depths and profiles of frame product.

STEEL STUD WALL ANCHORS

Four types of anchors are used to secure frame product in steel stud and drywall partitions: combination stud anchors, ‘Z’ anchors, compression anchors and face dimpled anchors. The selection of anchor type is dependent upon the frame assembly method and the profile of the jambs.

Combination stud anchors (CSA) are used for standard profile, welded or knocked-down F, Miter and Notch or Stick-Series frame product where the wall is constructed after the frame is in place.

The 2 piece CSA is available in 2 sizes. One is suitable for all standard drywall profiles from 4-1/2” (114) to 6-5/8” (168) jamb depth, plus 4-3/4” (121) and 5-3/4” (146) F, Miter and Notch or Stick-Series masonry profiles. The other size covers standard drywall profile jamb depths from 7-1/8” (181) to 9-1/2” (241) plus 6-3/4” (172) and 7-3/4” (197) masonry profiles. This anchor is made of 2 identical size parts which interlock to form the completed anchors. They can easily be put together to form various sizes to fit multiple standard jamb depths.
The one-piece CSA is used only in standard masonry profile frames. It is available in sizes to suit F, Miter and Notch or ST-Series 4-3/4", 5-3/4", 6-3/4", 7-3/4" and 8-3/4" (121, 146, 172, 197 and 222) jamb depths.

Both the 1 and 2-piece designs are manufactured from 20 gage galvanneal steel and are friction fitted inside the profile before the studs are erected.

For non-fire rated frames and fire rated frames up to 1-1/2 hour rating, either design may is shipped loose to the site for installation by the contractor.

Both designs of CSA are secured through the inner most steel stud with 2 standard 1/2" (13) long pan head sheet metal screws per anchor.

‘Z’ anchors, the second type of steel stud anchor, are used for non-standard jamb depth double rabbet profiles in welded or knocked-down frames. They are available in widths of 2", 3", 5" and 7" (50, 75, 125 and 175) and are manufactured from 16 gage galvanneal steel.

These anchors are tack welded in two places to the inside of the profile at the factory or distributor’s shop directly above or below the hinge reinforceings and directly opposite on strike jambs. As with the CSA designs, ‘Z’ anchors are secured through the inner most stud with 2 standard 1/2" (13) long pan head sheet metal screws per anchor to suit jamb depths up to 9-3/4" (248) and are manufactured from 16 gage galvanneal steel.

The quantities of both the CSA and ‘Z’ anchor used per jamb are the same as for masonry wall anchors.
Compression anchors are the third type used in steel stud partitions. They are provided as part of an anchoring system in Fleming DW-Series knocked-down drywall frames only, where the frame is installed after the wall is completed.

These anchors are factory welded into the upper portion of each jamb. By turning an adjusting screw located in the jamb soffit, the internal portion of the anchors press snugly against the steel studs, plumbing and squaring the frame in the opening. The drawing below illustrates the 18 gage galvanneal compression anchor assembly.

Faced dimpled anchors are the remaining type for steel stud partitions. This method is used only on Fleming’s A-Series adjustable frames.

The faces of A-Series jambs and heads are factory punched and dimpled for # 8 drywall screws. After the frame is in place, plumbed and squared, it is anchored to the partition with 2-1/2” (64) drywall screws. Jambs up to 86” (2200) rabbet height receive 3 dimples per face and jambs up to 96” (2450) have 4. Head faces are dimpled at each end, with pairs having an additional set at the center of the rabbet width. The figure below illustrates typical corner intersection and installation details.

WOOD STUD WALL ANCHORS

Wood studs are nominally 2” x 3” (51 x 76), 2” x 4” (51 x 102), 2” x 6” (51 x 152) or 2” x 8” (51 x 203). Unlike steel studs, they are actually 1/2” (13) smaller than their nominal size [ie : a 2” x 4” (51 x 102) is really 1-1/2” x 3-1/2” (38 x 89)].

Frames in wood stud and drywall partitions are installed in a wrap around application. As in most wrap applications, with welded or knocked-down frames, the throat opening should be 1/8” (3) larger than the actual wall thickness. Knocked-down drywall frames, Fleming’s DW-Series, should be sized so that the throat opening is the same as the actual wall thickness.
Wood stud partitions are built prior to the installation of the frame in a method called ‘tilt-up construction’. The wall, complete with rough openings for frames, is built flat on the floor and then stood or tilted-up into position. Double studs should be used at all jambs with solid blocking at either side of a framed opening. The drawing at the left shows a typical wood stud partition framed for a single door opening. The table provides the minimum rough stud opening sizes for Fleming F, Miter and Notch, ST, DW and A-Series product.

<table>
<thead>
<tr>
<th>Rough Stud Opening Width</th>
<th>F, M&amp;N or ST-Series Frames</th>
<th>Over-All Frame Width + 1/2&quot; (13mm)</th>
<th>Frame Rabbet Width + 1-7/8&quot; (48mm)</th>
<th>Frame Rabbet Width + 1-5/8&quot; (41mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rough Stud Opening Height</td>
<td>Over-All Frame Height + 1/4&quot; (6mm)</td>
<td>Frame Rabbet Height + 3/4&quot; (19mm)</td>
<td>Frame Rabbet Height + 13/16&quot; (21mm)</td>
<td></td>
</tr>
</tbody>
</table>

Four types of anchors are also used to secure frame product in wood stud and drywall partitions. Three of them are also used with steel studs: combination stud anchors, compression anchors and face dimpled anchors. The fourth, wood stud anchors, are used only in wood stud partitions. Again, as with steel stud construction, the selection of the appropriate wood stud anchor is dependent on the frame assembly method and profile of the jambs.

**Combination stud anchors** (CSA), previously described, are used for standard profile, welded or knocked-down F, Miter and Notch or Stick-Series frame product where the drywall is applied after the frame is in place.

When used in wood stud partitions, the ‘legs’ on the CSA are bent away from the throat opening, parallel to the wall and the anchor is secured to the faces of the adjacent jamb studs with 4 nails per anchor.

**Wood stud anchors** (WSA) are used specifically in 2” x 4” (51 x 102) nominal partitions with welded or knocked-down F, Miter and Notch or Stick-Series frames where the drywall is installed after the frame. These 20 gage galvanneal steel anchors are tack welded inside the jamb profile at the factory or the distributor’s shop directly above or below the hinge reinforcements and directly opposite on strike jambs.

Wood stud anchors can be used on all non-fire rated and all fire rated frame product. They are secured to the face of the stud wall with 4 nails per anchor as shown on the next page.
The number of anchors recommended for CSA and WSA in wood stud and drywall partitions is the same as for anchors in masonry walls. Refer to the table on F16(1).

Compression and face dimpled anchors, which were covered on pages F16(3) and (4), are used in the same fashion, whether installed in steel or wood stud partitions. Typical details are provided below.

EXISTING CONSTRUCTION

Existing construction is any wall that has been built prior to the installation of the frame. It occurs in new buildings or those being renovated where frame product is to be installed against pre-cast, poured concrete or structural steel.

Existing construction is also found in renovation work where masonry or stud and drywall partitions are to ‘punched-out’ for new openings or where an old frame is to be replaced with a new one.

Knocked-down and welded frame product, the F, Miter and Notch and Stick-Series, must utilize a butted application when installed in existing walls. In this application, the jamb depth is equal to or less than the actual wall thickness.

Knocked-down slip-on frames, either Fleming’s KD-DW or A-Series, are used in a wrap around application in existing walls and the throat opening should be equal to the wall thickness.

EXISTING PRE-CAST, CONCRETE OR MASONRY WALL ANCHORS

As with new partitions, the selection of anchor types in existing walls is governed by the frame assembly method and profile of the frame.

Existing pre-cast, poured concrete and masonry partitions with knocked-down or welded frames, have 2 styles of existing wall anchors available: butterfly or strap and spacer.
Butterfly type existing wall anchor guides are manufactured from 18 gage galvanneal steel. This style is used in 2" (50) face, double rabbet, masonry profile sections.

Strap and spacer type existing wall anchor guides are 16 gage galvanneal steel. There are 5 standard strap widths to suit jamb depths from 4-3/8" (111) to 9-5/16" (237). This style is used in single or double rabbet masonry profiles where the butterfly type is not suitable.

Face dimpled anchors, standard with Fleming’s A-Series frame, are the only option when a wrap application in existing pre-cast, poured concrete or masonry is needed. The frame is secured with 2-1/2" (64) long, 3/16" (4.8) diameter, flat head Tapcon screws in the jamb and head faces.
EXISTING DRYWALL PARTITIONS

In renovation work openings are sometimes 'punched-out' of an existing drywall partition for a new frame. In this type of work only knocked-down drywall type frames, either the Fleming DW or A-Series, will work in a wrap application.

The installation and anchorage for either series is identical to new construction in drywall. Compression and face dimpled anchors in steel or wood stud partitions were covered on sheets F16(3, 4 and 6).