

Continuously Welded Frames

Also called Full, Fully and or Full Profile Welded.

Established definitions and nomenclature:

1. FRAME MEMBER – A part of a frame such as a head, jamb, mullion or sill, also called frame profile, see Figure #1.

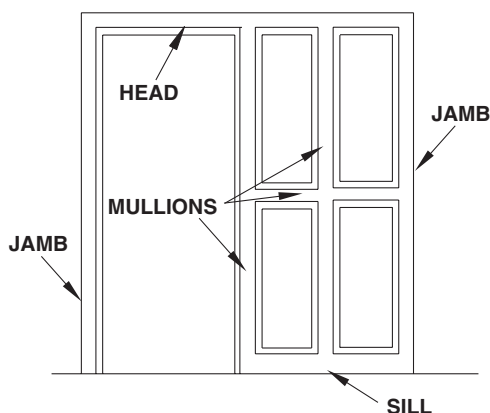


Figure #1

2. FRAME ELEMENTS – Specific parts of a frame member such as soffit, stop, rabbet, face and return. See Figure #2. A double rabbeted frame shown for illustration purposes only; alternate designs use the same nomenclature.

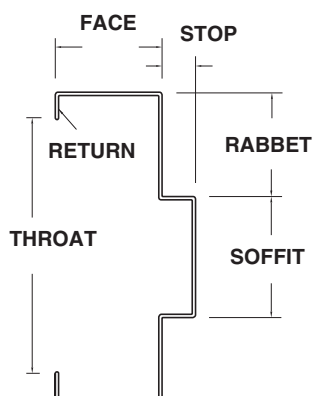
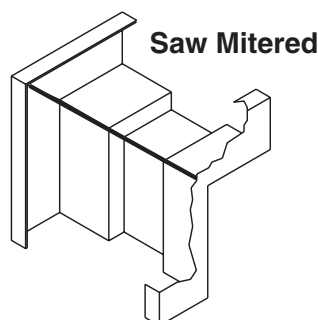


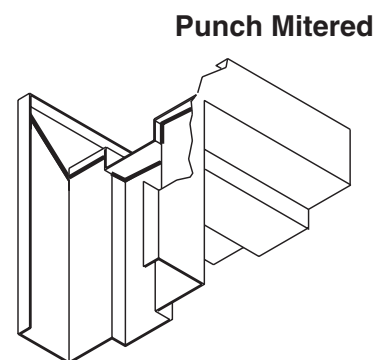
Figure #2

3. PERIMETER JOINT – The intersection of two or more frame members or elements that are accessible through the throat or from the unexposed side of the frame member. As perimeter applies, this is the outside boundary of the frame.

Perimeter joints of a continuously welded frame shall have all elements of the frame member continuously welded; soffits, stops, rabbets, faces and returns. Faces and returns may be welded either internally or externally. Soffits, stops, and rabbets shall be welded internally. Figures #3A – #3D illustrates typical perimeter joints; Figure #3A illustrates a saw and punched mitered corner joint.



Saw Mitered



Punch Mitered

Figure #3A

With many frame configurations the frame perimeter may not be square or rectangular, permitting a mitered corner. Figures #3B – #3D illustrate butted flush perimeter joints.

Figure #3B illustrates a typical sidelight frame where the sidelight does not extend to the floor.

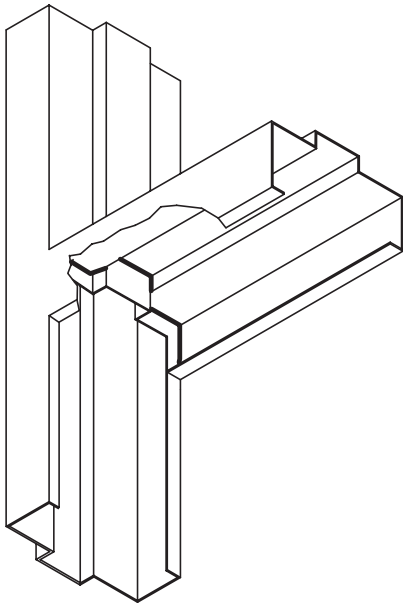


Figure #3B

Figure #3C illustrates a sidelight frame where the sidelight extends to the floor.

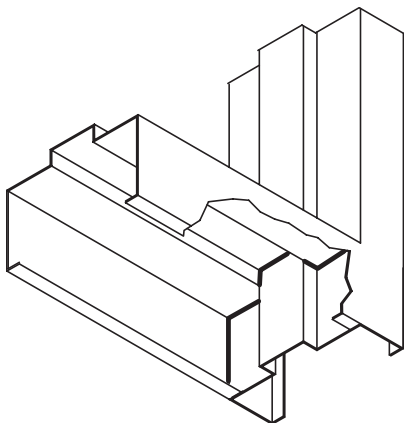


Figure #3C

Figure #3D illustrates a sidelight or smokescreen, where the vertical mullion is designed to extend to the floor.

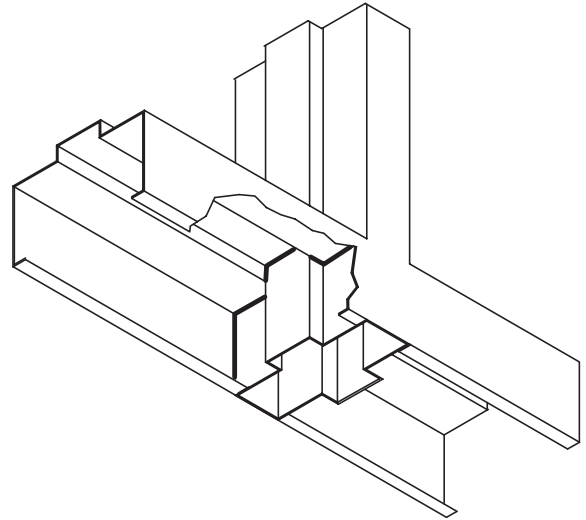


Figure #3D

Occasionally the sill, as with other frame members, is intended to be indented. As this is a perimeter joint, all elements of the frame members should be continuously welded, but due to design and/or construction requirements this is not feasible. Therefore, it is necessary to alter construction methods.

Figure #4A illustrates an indented sill that is continuously welded.

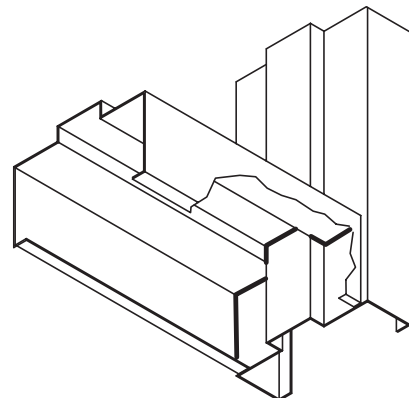


Figure #4A

Figure #4B, although drawn similar to Figure #4A, illustrates an indented sill that is reinforced with angles at the faces in lieu of continuously welding. These angles run the full height of the joint and are welded to both frame members. The rabbets, stops and soffit are continuously welded.

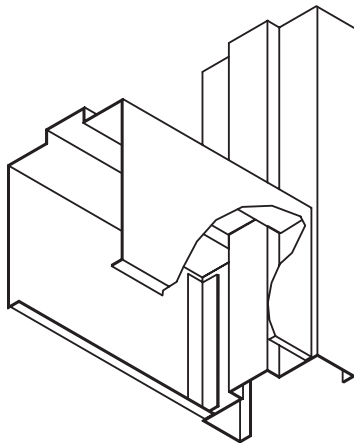


Figure #4B

Referring to Figure #3D, if this same horizontal frame member is not accessible through the throat or from the unexposed side of the frame member then this would be considered an internal joint, see Figure #5A.

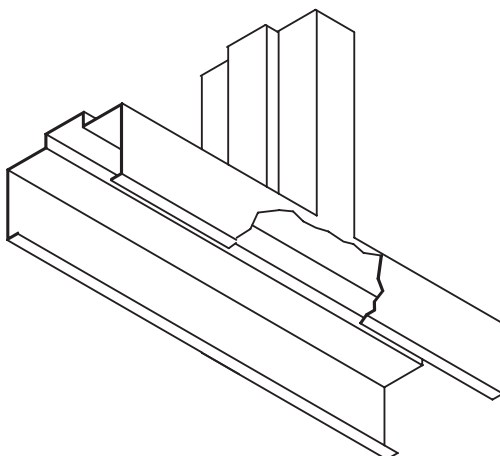


Figure #5A

Internal flush joints shall be face welded only. Joints at soffits, stops and rabbets are not welded and appear as a hairline seam. Figures #5A, #5B and #5C all illustrate internal joints. Note at Figures #5A & #5B that the internal frame member is not accessible from the inside throat of the perimeter frame member. This is the same situation whether it be a mullion and header, two mullions, or mullion and sill as shown in Figure #5C. At Figure #5C the etched line represents where the face joint would be welded. This, of course, would be finished smooth.

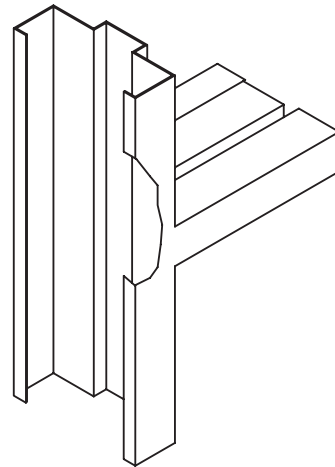


Figure #5B

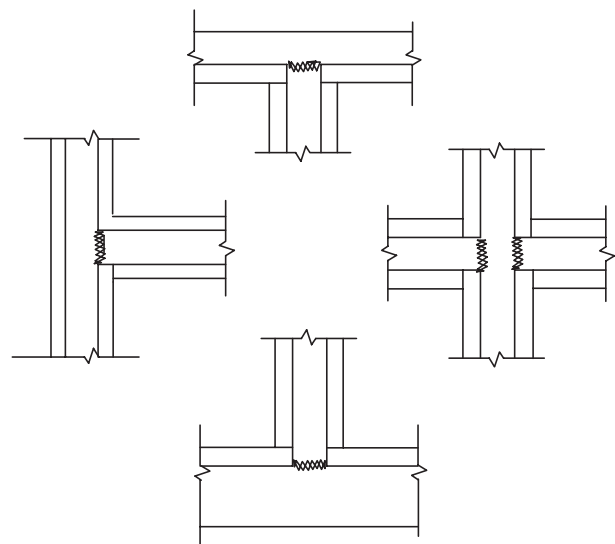


Figure #5C

Indented joints at internal frame members shall be internally reinforced and welded. Joints at faces, soffits, stops and rabbets are not welded and appear as hair line seams. Mullions are constructed with an overlapping seam. This seam is internally connected and appears as a hairline seam. See Figure #6.

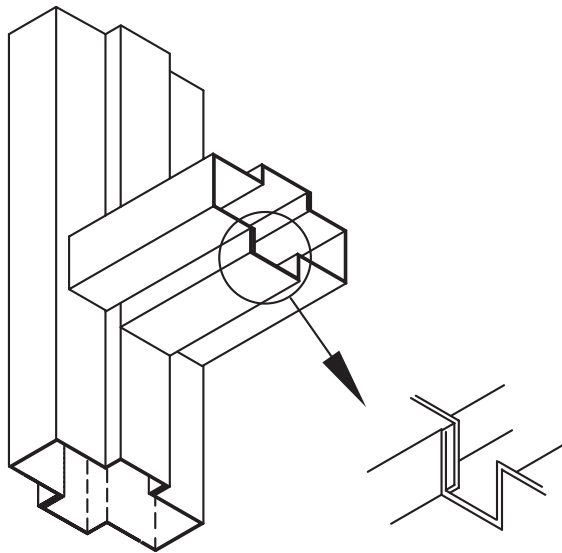


Figure #6