

1. Overview

This document outlines general recommended instructions for combining Fleetwood's window and door products in the field. Additional detailed information on mulling and transoms is also available for each product. There are two terms used for combining windows and doors. The first, mulling is used to attach two products side-by-side with a vertical member. The second, transom is the placement of a product (usually a window), over the top of another product (typically a door). When combining two products, especially mulling, it is desirable that they have the same frame depth. An I-shaped extrusion (I-mull) or structural member is used to attach products vertically, and a transom sill pan or combination of a transom sill pan and structural tube is used to combine products horizontally.

Note: Nail-fin frames may require field break-off of the nail-fin at mull or stack.

2. Reasons for Mulling and Transoms:

- Increased structural performance
- Allows the combining of several frames to accommodate large openings
- Allows the combining of different product types (Example: Sliding Door with Fixed Window)

3. Frame Depths and I-Mull Deducts Per Product:

Table 1: Mullion Deducts

Product	Frame Depth	I-Mull Deduct
Series 350-T	2.250	.625
Series 330-T	3.375	.500
Series 3800-T	4.500	.500
Series 1000	4.500	.500
Series 3000	4.500	.500
Series 3000-T	4.500	.500
Series 3200-T	4.500	.500
Series 3900-T	4.500	.500
Series 3050	1.908 per track	N/A
Series 3070-T	1.908 per track	N/A
Series 3070	1.908 per track	N/A

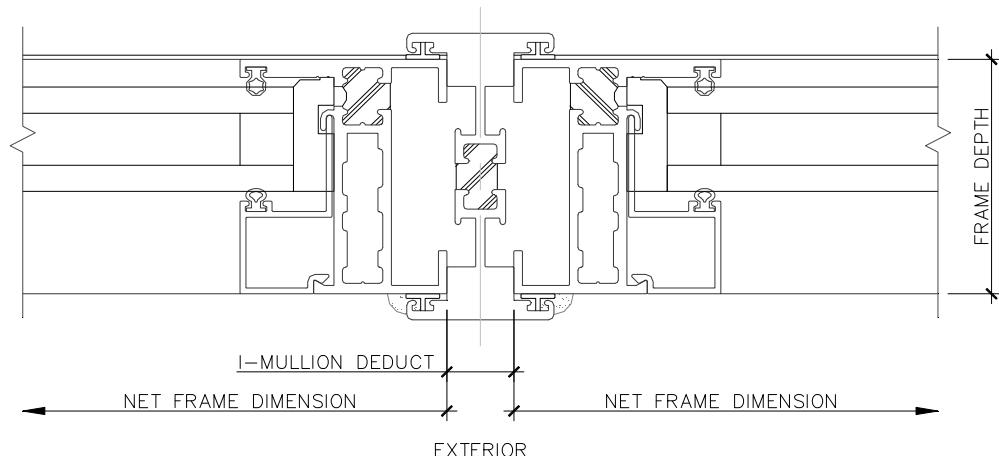
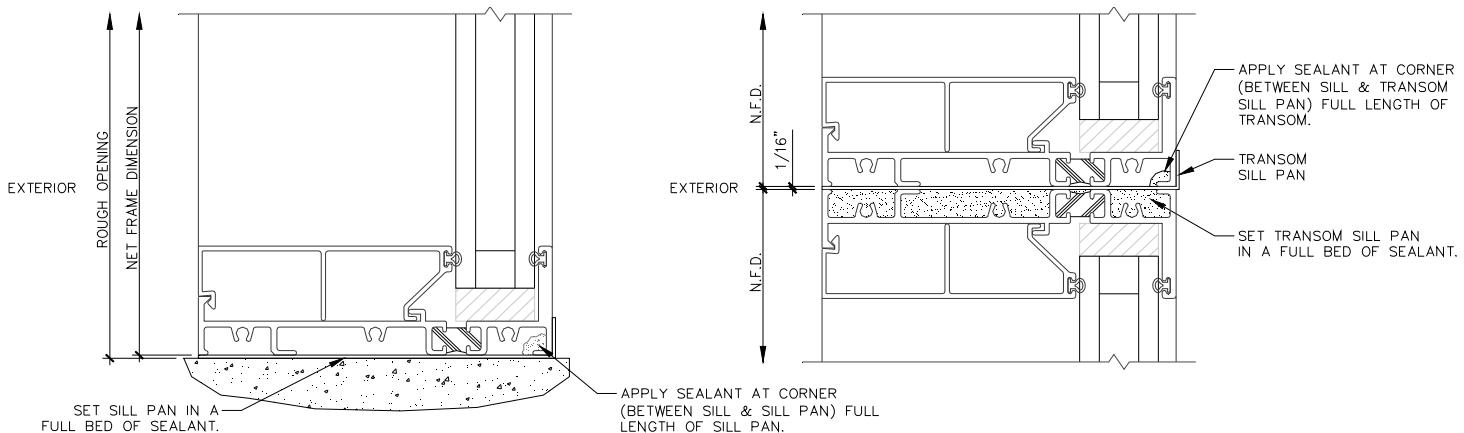


Figure 1:
Mullion Deduct Illustration

4. Frame Types and Sill Pan:

A block frame is required **at the sill** and at locations where products are being joined. I-mulls provided by Fleetwood will not work with nail-fin frames. A full-length sill pan is required with all mulled products and a transom sill pan with all transoms. Fleetwood can supply custom sill pans upon request. Sizes larger than 14' will be sent in sections and the installer is responsible for sealing the seams.



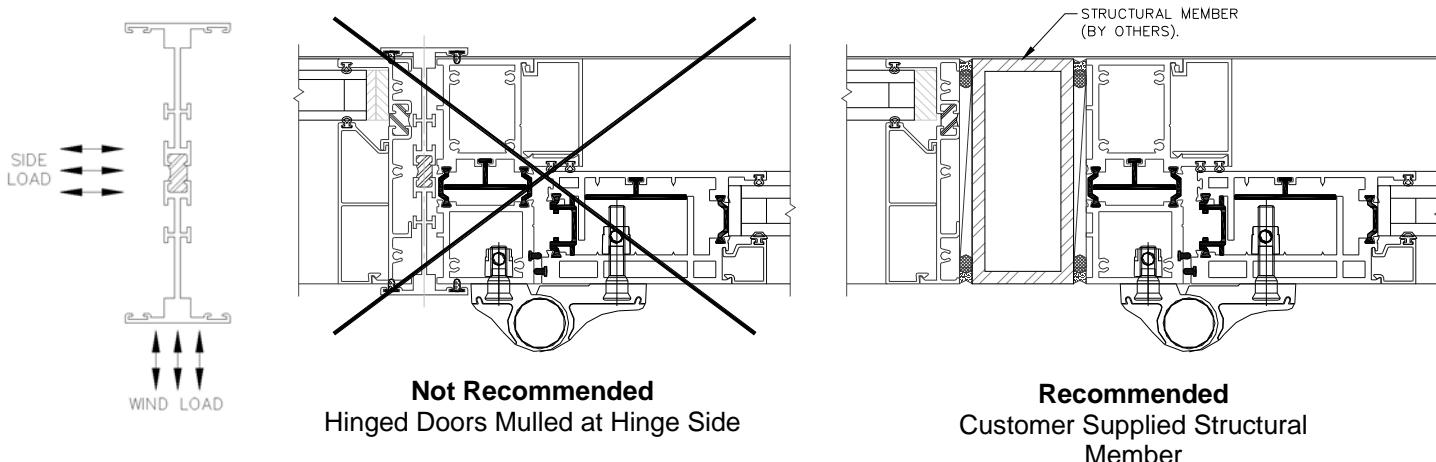
Series 3800-T Shown

5. Mulling Design Considerations:

When mulling products, the structural performance of the mulled connection must be considered. The required strength at the I-mulled connection is dependent upon the design rating and the net frame sizes. For configurations that exceed the strength of Fleetwood's standard I-mulled connections, it is the customer's responsibility to provide adequate structural members to meet design requirements.

I-mulls are designed to handle more wind load than a side load. When mulling products such as a swing door next to a fixed window the side load must be considered. The hinged side of the swing door will create a side load on the I-mull. This same situation occurs when combining a sliding door with a fixed window. The lock side of the door (if pulled while locked into jamb) will also create a side load.

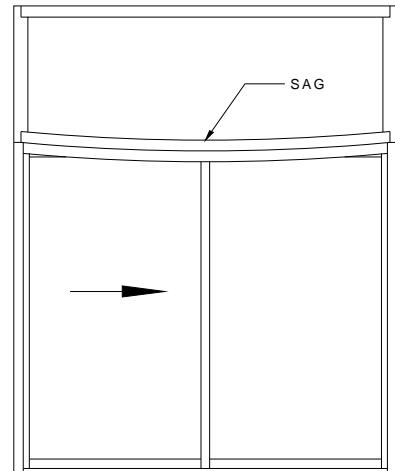
Note: Structural Members used with thermally broken products may impact energy performance (such as frost, heat, condensation, etc.).



6. Transom Design Considerations:

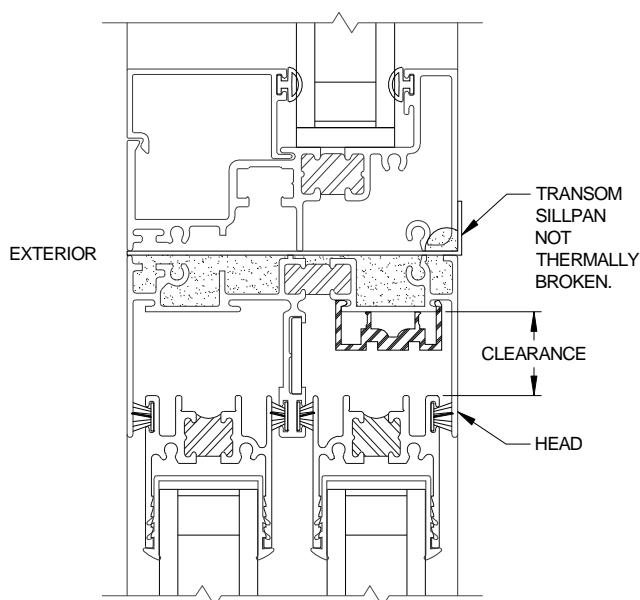
When using a transom, structural performance for both wind load and sag must be considered. A transom connection does not use fasteners to attach the frames. The connection relies solely on the structural properties of a compatible sealant. Fasteners are not recommended because they compromise the transom sill pan, which provides a water barrier between the products.

One configuration where sag can occur is when a window is placed over a sliding window or door. On sliding products a clearance is required between the header and the sliding panel. If the head were to sag it would reduce or eliminate the clearance and prevent the panels from sliding. An unsupported head of a sliding window or door can sag under its own weight. This problem is enhanced when the additional weight of another window is placed on top. For configurations that exceed the strength of Fleetwood's standard transom connections, it is the customer's responsibility to provide adequate structural members to meet design requirements.

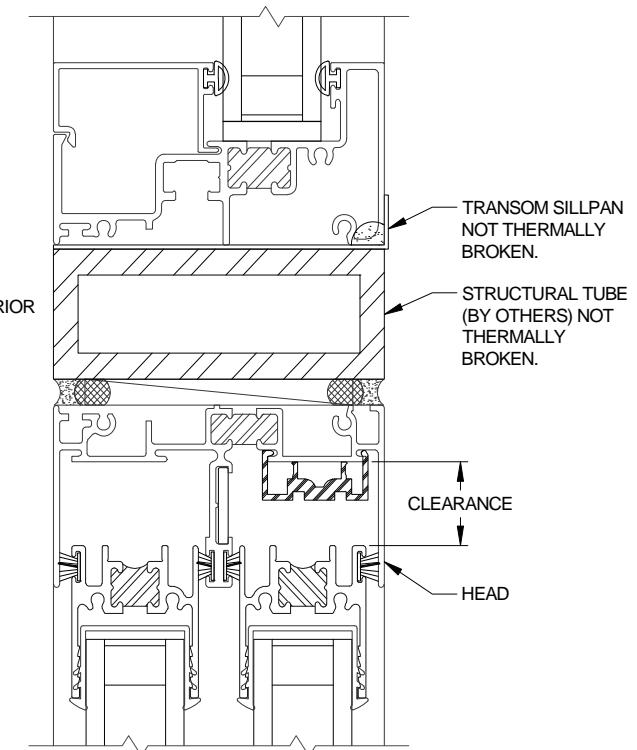


**Fixed Window Over
Sliding Window**

Note: Metal Stack Bars or other Structural Members used with thermally broken products may impact energy performance (such as frost, heat, condensation, etc.).



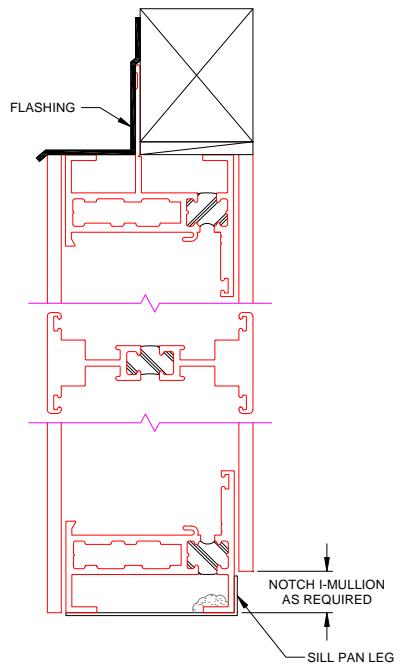
**Transom Sill Pan
Configuration**



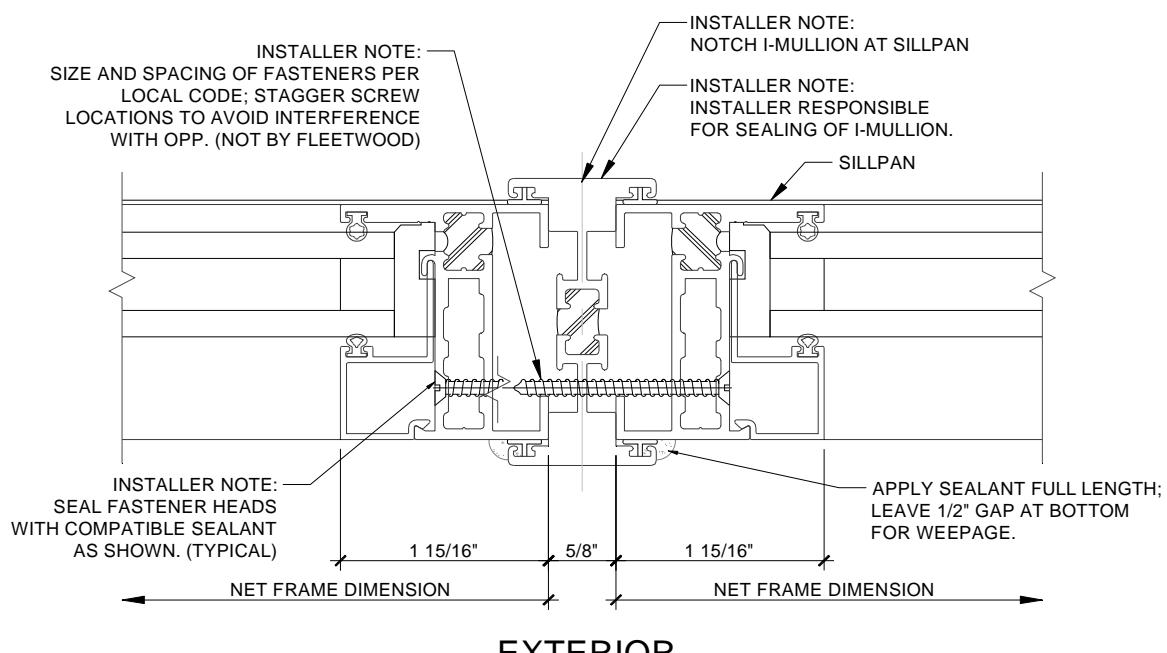
**Structural Tube
Configuration**

7. Mulling Installation Instructions for Fleetwood provided I-Mulls:

- Field notching of I-mull is necessary to clear the back leg of sillpan(s).
- Place I-mull between frames as shown. Make sure bulb-vinyl is installed in t-slots of I-mull.
- Install self-tapping fasteners thru frame and into I-mull. On GTF products it will be necessary to remove at least the glass stops, and depending on glass size, possibly the glass to install fasteners. Size and spacing of fasteners per local code, it may be necessary to stagger screws on opposite sides to avoid interference.
- Seal all fastener heads with compatible sealant.
- Reinstall glass (if necessary) and glass stops.
- Apply sealant full length of exterior vertical seams leaving a $\frac{1}{2}$ " gap at the bottom for weepage.
- To ensure water does not run into the mulled units insert backer rod and cover with compatible sealant.
- Place flashing over top of units as shown for additional moisture protection. Flashing not provided by Fleetwood.



Series 350-T Shown



Typical I-Mull Connection (Series 350-T Shown)

8. Transom Installation Instructions:

- Apply full bed of compatible sealant in the head of the lower frame as shown below.
- Place transom sill pan on top of lower frame head.
- Apply a full-length compatible sealant to the inside leg of the transom sill pan.
- Place upper frame (transom) on top of transom sill pan. Make sure the interior leg of the upper frame is pushed up against the inside leg of the transom sill pan and is setting in sealant.

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Series 3900-T with Series 3800-T Transom

