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RE: RO's, Shimming and Sash Site Lines

To Whom It May Concern:

- Rough Opening (RO): RO(s) are required to be a minimum 1/2" larger than the window dimension. This space is necessary to achieve specific objectives. Allows for thermal movement of rigid PVC. This cavity also serves as a receptacle for shims which are required to plumb level and square the window.

NOTE: **MGM Installation Instructions are applied to each window at time** of manufacturing, available upon request and typically supplied with submittals. RO(s) are typically supplied as well.

RO(s) Reference: ASTM E2112-07

**Standard Practice for Installation of Exterior Windows, Doors and Skylights**

5.9.1 *Rough Opening Size:*

5.9.1.1 The rough opening shall be larger in both width and height than the actual net dimension of the product to be installed. The installer shall obtain all available plan details and construction documents, as well as the manufacturer's rough opening requirements and instructions.

5.9.1.2 The installer shall notify his client if any conditions exist that would prevent the proper installation of the fenestration product, or prevent application of materials and components in accordance with this practice.

- Window(s) sitting directly on sill plate: (reference #4 MGM Installation Instructions) 1/4" **Shims are required** to be placed directly beneath each vertical at the time of installation. Horizontal and Vertical placement of these shims are critical for functionality as well as aesthetics.

Shim Reference: ASTM E2112-07

5.15 *Shimming:*

5.15.1 When required, shims shall be installed in a manner and in sufficient number to minimize deflection, distortion, or rotation of the frame to achieve proper operation of the fenestration products, or as recommended by fenestration manufacturer.

NOTE: Proper shimming is extremely important. Under-shimming can cause the unit to sag out of square. Over-shimming can result in bowed jambs, head jamb, sill, or combination thereof. Both conditions can contribute to improper operation of the sash.



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- Sash site line(s) margins (#6, 7 and 8 MGM Installation Instructions). Lateral wood shims need to be installed at mid span as to plumb the jamb. 1/4” Setting shims are used to lift the window sill off the sill plate and need to impermeable. Thermal movement is expansion and contraction that occurs seasonally and/or while new buildings dry out. King and jack stud transfers upper weights to the sill plates, the window sill plate will most likely crown. Window sill(s) found to be sitting directly on the sill plate will deform during this movement.

Reference: ASTM E2112-07

TABLE 4 Unit Shimming Tolerance ± inches from Nominal

Products shall not be racked more than 1/8” out of square for dimensions up to 4 ft or more than 3/16” for dimensions greater than 4 ft.

Measure	in./ft	in. Over 4 ft	in., max	Method of
Level horizontal measure or tape	1/32”	1/8”	1/8”	level and steel rule
Plumb vertical measure steel rule or tape	1/32”	1/8”	1/8”	level or plumb-line and
True/Rack across corners	1/32”	1/8”	3/16”	using two strings
Straight measure of straightness steel rule or tape	1/64”	1/16”	1/16”	level or plumb-line and
Squareness diagonal measure tape	n/a	n/a	A	steel rule or

A 1/8” up to 20 ft<sup>2</sup>, 1/4” over 20 ft<sup>2</sup>



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NOTE: Uneven sash site line(s) can be expected when windows are installed within these tolerances. Windows installed within these parameters and field tested in accordance with AAMA 502-02 Voluntary Specification for Field Testing of Windows and Sliding Glass Doors would be expected to perform as outlined within.

Thank you for all your business and support, we do appreciate it very much....

Sincerely,

Randy J. Graves  
Sales Engineer

