



STANDARD PROCEDURE

No. I-50

*Window Installation Instructions*  
*Structural Mullion Installation*

Examined, Accepted and Approved

By: D Ray VanNess

Title: President

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## 1.0 INTRODUCTION:

- 1.1 The purpose of this standard procedure is to establish the processes required for the successful installation of Seal Craft window systems utilizing structural mullions (or three piece mullions) into conditions where it has been determined that the use of such mullions is desirable or necessary.
- 1.2 This procedure should be considered a support document, which is to be used in conjunction with the standard window installation instructions for the type window and system being installed. Installer qualifications, responsibilities and duties are detailed within the installation procedure for the window system being installed and are not repeated within this text.
- 1.3 The guidelines set forth herein are based upon standard industry practices and Seal Craft specific recommendations coupled with our understanding of job site conditions and requirements.
- 1.4 This procedure does not purport to address all of the safety problems that may be associated with it's use. It is the responsibility of whoever uses this procedure to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## 2.0 THINGS TO CONSIDER:

- 2.1 Structural mullions; by their nature, are utilized to attach two windows side-by side within a single opening and to do so in such a way that the use of the mullion enhances the structural integrity of the union of the two window frames. Structural mullions are not designed to be used as stack mullions or to mull one window to the top of another.
- 2.2 Prior to the installation of structural mullions; the window installation system, opening conditions and calculations should be predetermined. Considerations should be made as to the application and use of such mullions.
- 2.3 The following details two methods of installing structural mullions;
  - 2.3.1 The structural mullion installation procedure with brackets is a more structural installation method where the head and sill ends of the mullion are attached (by using a bracket) into the substrate or structure which greatly enhances the structural effectiveness of the mullion.
  - 2.3.2 Structural mullion installation without attachment brackets or "floating" mullion method adds considerable structural integrity to the union of two window frames but relies only upon the bending moment properties of the mullion itself and does not draw upon the structural qualities which can be obtained by bracketing the mullion to the substrate.

## 3.0 INSTALLATION PROCEDURE WITH BRACKETS:

- 3.1 Ensure that all windows are installed in accordance with ASTM E 2112. The following step-by-step instructional procedure is provided for the convenience of the installing subcontractor.
- 3.2 Structural mullions with brackets are installed before the windows are set but after the opening is prepared. Ensure that the opening has been prepared and that any subframe systems have been installed according to procedure.
- 3.3 Measure the exact cut length required (from subsill up to the subframe head or substrate) as depicted in the approved drawings and cut the desired quantity of mullions. Structural mullions are precut in the factory an inch or two longer than needed so that the installer can exactly match varying field conditions with a single cut. Some subsill or other accessory conditions may require that a notch be cut within the end of the mullion.
- 3.4 Insert one 3" x 3" x 1" mullion bracket (provided) into each end of the mullion. The mullion has been designed to receive the 1" dimension of the bracket.
- 3.5 Mark the location of the mullion within the width of the opening, positioning the mullion vertically between the head and sill components of the opening. Ensure that the mullion is installed vertically plumb.
- 3.6 The mullion bracket at the sill end of the mullion should be placed into a bed of sealant prior to the installation of fasteners. This may require that installation holes into the substrate be drilled first and the area cleaned prior to sealant being applied, the mullion being set and fasteners installed.
- 3.7 Once the mullion brackets are secured to the opening; install fasteners through the body of the mullion and into the mullion bracket.
- 3.8 Fastener types and frequencies shall be according to the project specific engineer stamped fastener calculations. The AAMA 2501-06 Voluntary Guideline for Engineering Analysis of Window and Sliding Glass Door Anchorage Systems is the appropriate standard for fastener calculations.
- 3.9 Seal around the mullion bracket and also seal the screw heads that penetrate the mullion bracket and into the substrate. Apply an ample back-seal to the interior side of the mullion at both head and sill ends.
- 3.10 Sealants to be as specified by architect or equal and applied around the full exterior and interior perimeter of newly installed windows. Follow sealant manufacturer's application instructions.
- 3.11 Once the mullion has been set, inspect the sill area of the opening to ensure that

adequate sealant has been installed at any sill penetrations and at the sill to jamb connections.

- 3.12 Set windows into the opening according to procedure and adjust their position equalizing the left to right tolerance to equal and ensuring that the mullion and any subframe members have adequate purchase or overlap onto the window frame.
- 3.13 Install the pressure plate (mill finish) by installing the calculated fastener through the pressure plate and into the body of the mullion. If calculations require; install stitching fasteners through the pressure plate and into the jamb of each window. Fasteners shall be as per 3.8. An impact type screw gun can be used to ensure full compression of the weather-seals of the mullion. Ensure that screw heads are not so large that they cause problems when installing the mullion cover.
- 3.14 Measure and cut the interior mullion cover to length and install. Use a dead-blow hammer and block of wood applying pressure that the extreme edge of the mullion cover to reduce the occurrence of dents.
- 3.15 If desired a cap seal may be applied to all window to subframe and window to mullion connections.

#### 4.0 INSTALATION PROCEDURE – FLOATING:

- 4.1 Ensure that all windows are installed in accordance with ASTM E 2112. The following step-by-step instructional procedure is provided for the convenience of the installing subcontractor.
- 4.2 When installing structural mullions without bracketing them into the substrate; the windows and other accessories associated with the window system can be installed first and the mullions installed as a final installation step. In order to do this, set the windows into place according to procedure and leave a space between each window jamb which is greater than ½” and less than 1”. This also allows the installer a tolerance to work with while dealing with varying opening width dimensions.
- 4.3 Once the windows and other accessories (subframes, sill flashings, panning and/or interior trim have been set; measure the exact cut length required as depicted in the approved drawings and cut the desired quantity of mullions.
- 4.4 Insert the mullion body into the space, which was left between two windows. This can be done from either the exterior or interior but it is usually done from the exterior with the pressure plate and cover plate installed from the building’s interior.
- 4.5 Install the pressure plate (mill finish) by installing the calculated fastener through the pressure plate and into the body of the mullion. If calculations require; install stitching fasteners through the pressure plate and into the jamb of each window. Fasteners shall be as per 3.8. An impact type screw gun can be used to ensure full compression of the weather-seals of the mullion. Ensure that screw heads are not so large that they cause problems when installing the mullion cover.

- 4.6 Measure and cut the interior mullion cover to length and install. Use a dead-blow hammer and block of wood applying pressure at the extreme edge of the mullion cover to reduce the occurrence of dents.
- 4.7 If desired a cap seal may be applied to all window to subframe and window to mullion connections.

#### INSTALLATION TIPS:

- 5.1 Ensure that screw heads are not so large that they cause problems when installing the mullion cover. Using fasteners with a head, which is taller than .150", may cause dents to be formed within the exposed surface of the cover plate.
- 5.2 An impact type screw gun can be used to ensure full compression of the weather-seals of the mullion.
- 5.3 When applying mullion covers use a mallet and wooden block to apply pressure at the edge of part for ease of snap and to reduce the occurrence of dents.
- 5.4 Subsills are utilized to ensure that the window system is adequately attached and sealed to the sill area of the openings construction. The integrity of the waterproofing within the subsill is perhaps the single most important element in ensuring that the system will prevent water from intruding into the wall or building. Therefore, the complete and proper sealing of end dams, fastener heads, mullion brackets and all penetrations through the subsill is critical to the success of this type of installation. The installer may wish to perform a voluntary "Optional Sill Dam Test" prior to installing windows in accordance with AAMA 502-02 to ensure the quality of the installation and to mitigate financial loss since resealing leaking subsills cannot be done without removal of the windows.

#### 6.0 MANUFACTURERS DISCLAIMER:

- 6.1 Seal Craft is a manufacturer of quality commercial window systems and as such is compensated for the delivery of the same, per approved shop drawings, unto the job site. Seal Craft is not compensated for, and therefore assumes no responsibility for, building design, interface of its products with other building elements or any area of accountability other than the manufacture and delivery of quality window systems as required under each contract.
- 6.2 The qualifications and procedures as set forth herein are recommendations of Seal Craft as the manufacturer and are intended as a minimum guideline for the successful installation of its products and must be adhered to in order for the Seal Craft warranty to be in effect.
- 6.3 Upon review of the contract documents, shop drawings and manufacturers

installation instructions, final architectural determination should be made as to further requirements for flashing, sealant or any other detail that may need to be added or addressed to ensure proper interface with the new fenestration and the desired performance of the same.

- 6.4 Flashing and/or an appropriate method of sealing shall be designed as part of an overall weather resistant barrier system. It is not the responsibility of Seal Craft to design or recommend a weather resistant barrier system appropriate for each job.
- 6.5 The qualifications and procedures as set forth herein must be reviewed and approved prior to commencement of installation activities by a duly authorized and accountable owners representative or agent.
- 6.6 Seal Craft assumes no responsibility for any liability on account of the presence or growth of black mold or any bacteriological growth in any building or structure in which its window systems are installed.
- 6.7 For building construction, which incorporates EIFS; the EIFS Industry Manufacturers Association (EIMA) guidelines must be adhered to in order for Seal Craft's product warranty to be valid.
- 6.8 By stamping and/or signing or by any other means affixing a 'mark' to the submittal booklet that contains these instructions, both architect and contractor demonstrate complete agreement and accept full responsibility for these installation procedures. Further, both architect and contractor agree that the manner in which the windows are installed is beyond the control of the manufacturer and as such, Seal Craft has no responsibility for any liabilities that may arise from the improper installation of its products.
- 6.9 Should field testing be a Project requirement, installing window contractor shall cooperate fully, preparing window unit(s) as requested by the Architect and/or Independent Laboratory personnel, but in no case participate in an unofficial "garden hose tests". Any field testing shall be pursuant with the current AAMA 502 Standard and Seal Craft shall be afforded the opportunity to attend any and all such testing and given a minimum of 15 work days notice in advance of any field testing.