

## CHECKLIST #0255 FOR THE APPROVAL OF: MULLIONS

- ❑ Basic Requirements Checklist.

### Clipped Mullions

#### *Engineering Submittal:*

- ❑ Submittal based on rational analysis considering the E, I, & S of the mullion only. The E & I of the adjacent window extrusions shall not be added to the calculations. If using a computer program to generate the tables or graphs, sample calculations shall be provided of at least two entries on the table or graph.
- ❑ Calculations for the end supports of the clipped mullion. Present results in table or graph form. Include anchor manufacturer's specification data sheets showing allowable loads, minimum edge distances, and minimum embedment for the anchors to be used.
- ❑ Two sets of the manufacturer's 'approval document' including:
  - a) Typical cross section of mullion and parts, including dimensions,
  - b) Assembly drawing indicating reinforcements if applicable,
  - c) Fastener diagram indicating type, size, embedment, location, and edge distance requirements,
  - d) Connection details for all conditions to be included (i.e. mull to wood, mull to mull, etc.),
  - e) Span-load-tributary width table or graph for the type of mullion, and
  - f) Allowable load for given type of anchor condition.
- ❑ Manufacturer will be instructed on the verification test to conduct on the mullion submitted for approval.

### Un-Clipped Mullions

#### *Engineering Submittal:*

- ❑ Submittal based on rational analysis considering the E, I & S of the total mullion. Un-clipped mullions may be analyzed in combination with the E, I & S of the adjacent window jambs. The E, I & S may be used for the calculations. If using a computer program to generate the tables or graphs, sample calculations shall be provided of at least two entries on the table or graph. When composite mullions are used (i.e. wood, aluminum, steel) establish E and  $F_b$  for each material. Compute I & S values in terms of one referenced material, and use it for deflection limitation. Establish maximum allowable moment by calculating share of moments for wood/aluminum/steel by ratio of stiffness and limit to weakest component.
- ❑ Calculations for transferring of the load to the window fasteners. Present results in table or graph form. Include anchor manufacturer's specification data sheets showing allowable loads, minimum edge distances, and minimum embedment for the anchors to be used.



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PRODUCT CONTROL SECTION**

- One set of the manufacturer's 'approval document' including:
  - a) Typical cross section of mullion and parts, including dimensions,
  - b) Assembly drawing indicating reinforcements if applicable, and attachment of window extrusions,
  - c) Fastener diagrams indicating type, size, embedment, location, and edge distance requirements,
  - d) Connection details for all conditions to be included (i.e. wood end condition, pre-cast end condition, etc.),
  - e) Span-load-tributary width table or graph for the type of un-clipped mullion, and
  - f) Allowable load for given type of anchor condition.
  
- Manufacturer will be instructed on the verification test to conduct on the un-clipped mullion submitted for approval.
  
- One set of manufacturer's design drawings marked and verified by the testing laboratory.
  
- Copy of letter instructing what verification test was to be performed.

**The following current laboratory tests and test reports in compliance with protocol TAS 301.**

**Clipped Mullions**

- Structural Test Report per TAS202.
  
- Impact & Cyclic tests per TAS201 & TAS203. (If applicable)

**Un-Clipped Mullions**

- Air, Structural & Water Test Report per TAS202.
  
- Impact & Cyclic tests per TAS201 & TAS203. (If applicable)

Notes:

1. TAS201 & TAS203 are only applicable if mullion approval is to include impact resistance.
2. If mullion has plastic as a component, add plastic checklist to this requirement.

