



WDMA TECHNICAL INTERPRETATION 03-02

Approved: 5/15/07

DATE OF INQUIRY: July 3, 2003

PERTINENT SPECIFICATION:

- AAMA/NWWDA 101/I.S. 2-97, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors
- ANSI/AAMA/WDMA 101/I.S.2/NAFS-02, Voluntary Performance Specification for Windows, Skylights and Glass Doors
- AAMA/WDMA/CSA 101/I.S.2/A440, SPECIFICATIONS For Windows, Doors, and Unit Skylights

SECTION(S) IN QUESTION:

- AAMA/NWWDA 101/I.S. 2-97 - Sections 2.1.4.1 and 2.1.4.2
- ANSI/AAMA/WDMA 101/I.S.2/NAFS-02 - Sections 5.3.4.1 and 5.3.4.2
- AAMA/WDMA/CSA 101/I.S.2/A440 - Sections 5.3.4.2 and 5.3.4.3

INTERPRETATION REQUESTED:

Current language commonly used in the referenced specifications state typically that “no member shall deflect more than . . .” Clarification of that commonly used language is requested such that testing organizations have a clear understanding of the requirement and different organizations will measure the same members consistently to avoid disparity.

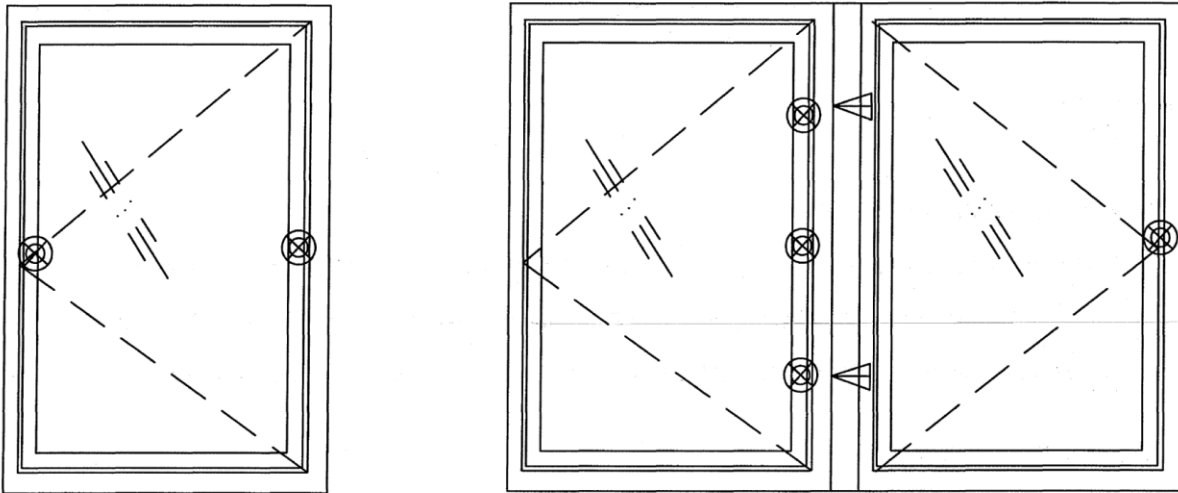
INTERPRETATION MADE:

The intent of the referenced specifications is to ensure that deflection and permanent set measurements are taken during every uniform load deflection and structural load test. The specifications also require that these measurements be recorded in the test report and, if the particular window type and performance class require a deflection limit that the report show whether or not this limit is met by the product being tested. To satisfy this requirement, all unique glass-supporting sash, panel and frame members shall be measured for deflection and permanent set at their longest unsupported span or longest span between anchor points. This means that if the window or door assembly has two or more frame or sash members which have the same cross sectional properties, only the one with the longest unsupported span needs to be measured for deflection and set. The laboratory must exercise discretion and judgment in determining if fabrication or reinforcement details necessitate additional measurements. The intent of the specifications has never been that ALL members of the assembly must be measured but that a worst case representative of each glass-supporting sash, panel or frame section be measured and that these values be reported in the test report as representative of the worst case for the assembly being tested. Reference the attached drawings indicating typical gage locations for guidance in selecting measurement locations.

The test report must be clear as to the members measured and the results obtained.

Typical Deflection Gauge Locations for Casement Windows

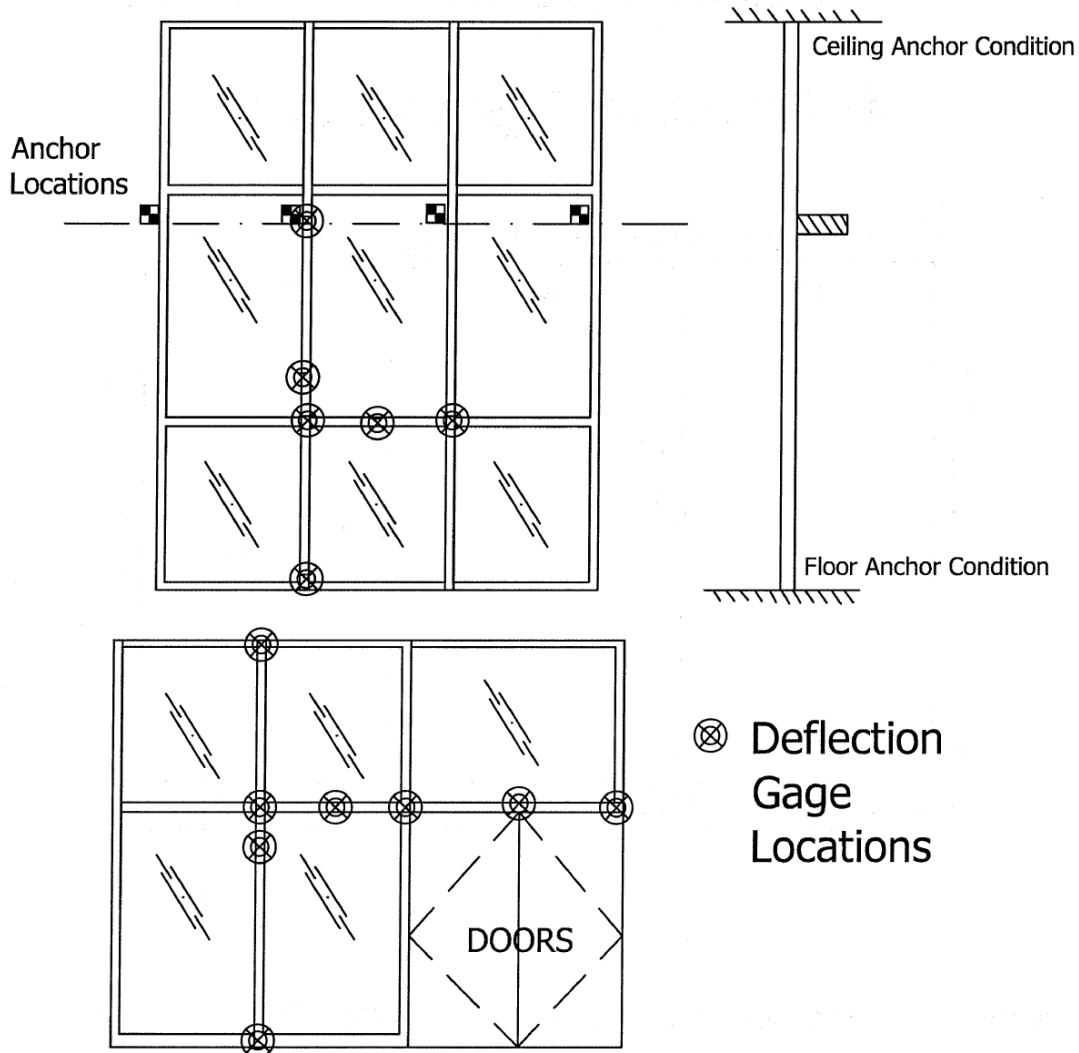
⊗ Deflection Gauge Locations



- Measure either the lock stile, hinge stile, or rails, whichever has the longest unsupported span.
- Always use a 3-point measurement (support ends and center of unsupported span).

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

Typical Deflection Gauge Locations for Curtain Walls and Store-Fronts

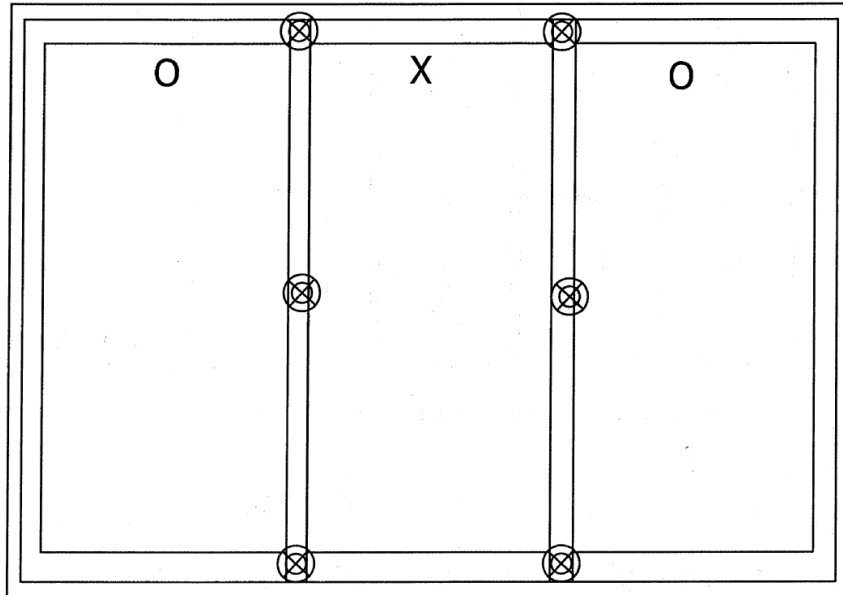


- Measure longest unsupported span of each unique member
- Measure longest span of reinforced/non-reinforced members (both horizontal and vertical)
- Measure span with splice (if used) and splice location also
- Measure cantilever spans if length is at least 20% of longest span on unit
- Always use a 3-point measurement (support ends and center of unsupported span).

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

Typical Deflection Gauge Locations for Horizontal Sliding Windows and Sliding Glass Doors

⊗ Deflection Gage Locations



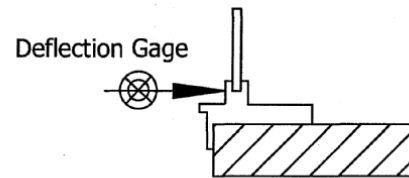
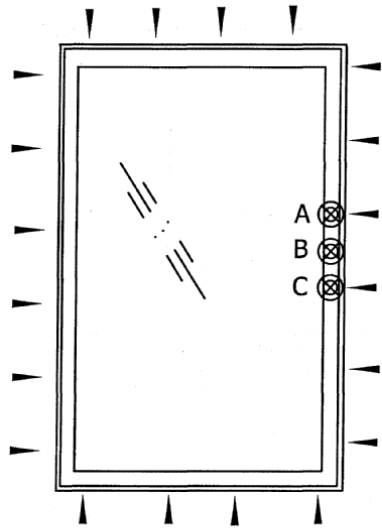
- Measure each unique meeting or locking stile
- Always use a 3-point measurement (support ends and center of unsupported span).

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

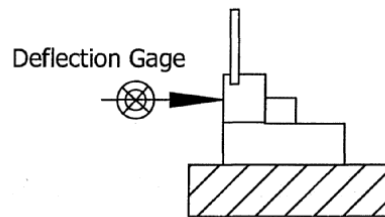
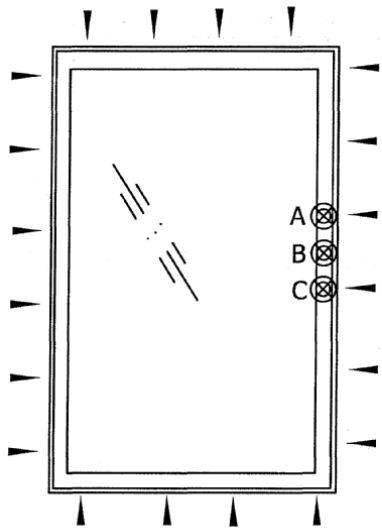
Typical Deflection Gauge Locations for Fixed Windows

⊗ Deflection Gage Locations

▶ Fastener Locations



Direct Set Window



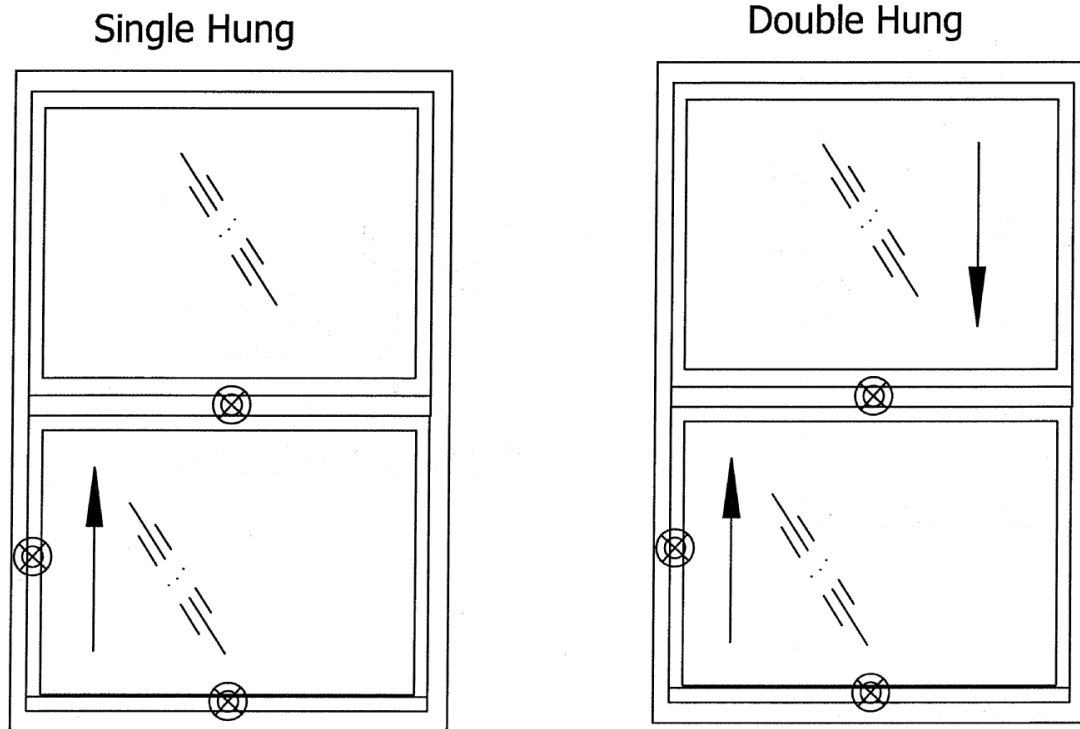
Block Frame Window

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- Measure deflection between fasteners (longest span)
 - Always use a 3-point measurement (support ends and center of unsupported span).

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

Typical Deflection Gauge Locations for Hung Windows

⊗ Deflection Gage Locations

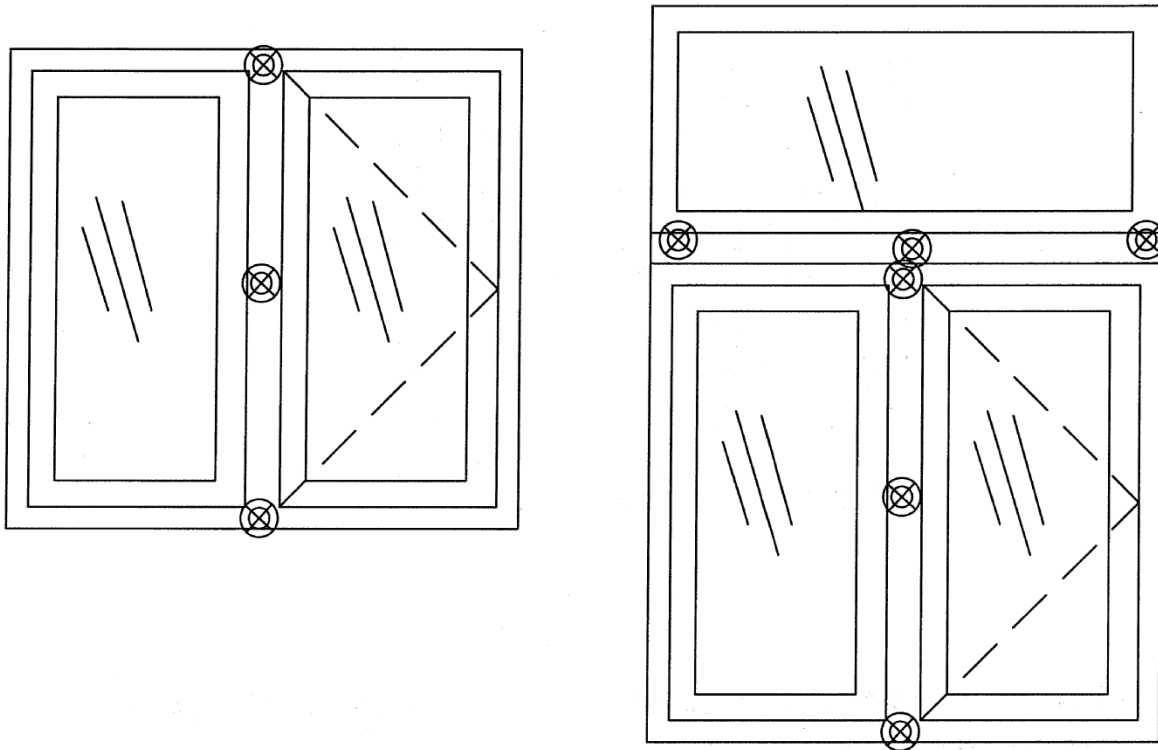


- Always use a 3-point measurement (support ends and center of unsupported span).

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

Typical Deflection Gauge Locations for Structural Members/Mullions

⊗ Deflection Gage Locations

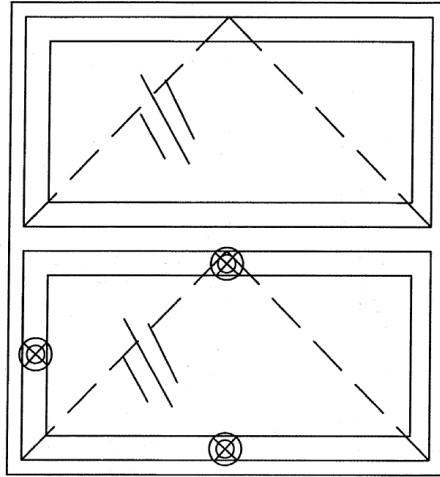


- Measure longest unsupported span of each unique member
- Always use a 3-point measurement (support ends and center of unsupported span).
- Measure longest unsupported span in either vertical or horizontal direction as necessary

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

Typical Deflection Gauge Locations for Projecting/Awning Windows

⊗ Deflection Gage Locations



- Measure either the stiles or rails, whichever has the longest unsupported span
- Always use a 3-point measurement (support ends and center of unsupported span)
- Please look at mullion/structural member drawings for deflection gage location for horizontal structural member

As a minimum, these locations are mandatory. The testing agency is ultimately responsible to determine the principal member(s) that must be measured for deflection and permanent set in accordance to the attached Technical Interpretation.

REVIEWED/ APPROVED BY:

COMMITTEE	COMMENTS / ACTION	STATUS
JDMG		
WDMA	Approved	5/15/07
AAMA	Originally Approved by AAMA Document Management Committee as AAMA Technical Interpretation #67.	Approved – 9/9/05 Ed. Revised – 11/09/05