



**AAMA Standards Comparison - Windows, Doors, and Unit Skylights**

Revisions and Additional Requirements as Compared to 1997 Version	AAMA/WDMA 101/I.S.2-97	101/I.S.2/NAFS-02	AAMA/WDMA/CSA 101/I.S.2/A440-05	AAMA/WDMA/CSA 101/I.S.2/A440-08	AAMA/WDMA/CSA 101/I.S.2/A440-11
Format	Combined	Combined	Combined	Combined	<b>Separate Sections for products, materials, and components</b>
Basis of Rating	IP Only	IP Primary (Metric Optional)	IP Primary (Metric Optional)	IP Primary (Metric Optional)	IP Primary (Metric Optional)
Compliance Measurement Units	IP Primary (Metric Secondary)	Metric Primary (IP Secondary)	Metric Primary (IP Secondary)	Metric Primary (IP Secondary)	Metric Primary (IP Secondary - <b>Hard Conversion</b> )
# of Product Operator Types	20	26	30	31	<b>36</b>
# of Performance Classifications	5 (R, LC, C, HC, and AW)	5 (R, LC, C, HC, and AW)	5 (R, LC, C, HC, and AW)	4 (R, LC, CW, and AW)	4 (R, LC, CW, and AW)
Alternative Minimum Test Size and minimum performance grades (PG) for Class R products (Clause 9)	Not Included	Not included	Not included	Added	Included
Operator Type Codes	F, DA, HGD & SGD same as 93	F, DA, HGD & SGD same as 93	Chg to FW, FD, DAW, SHD & SD	FW, FD, DAW, SHD & SD	FW, FD, DAW, SHD & SD
Performance Grade Caps	No upper limit on Grade (Design Pressure)	Upper limit of 60 psf above Gateway except AW	Upper limit of 60 psf above Gateway except AW	Increased to 100 psf for R, LC, and CW classes. No limit for AW	100 psf for R, LC, and CW classes. No limit for AW
U.S. Operating Force (SGD/SD require both forces)	Force to maintain motion ONLY	Force to initiate and maintain motion	Force to maintain motion but test and record force to initiate	Force to maintain motion but test and record force to initiate	Force to maintain motion but test and record force to initiate
Canadian Operating Force	Not included	Not included	Force to maintain motion and force to initiate based on performance class	Force to maintain motion and force to initiate based on application	Force to maintain motion and force to initiate based on application
Air Leakage	0.3 and 0.1 cfm/ft2	0.3 cfm/ft2 ONLY	0.3 and 0.1 cfm/ft2	0.3 and 0.1 cfm/ft2	0.3 and 0.1 cfm/ft2
Canadian Air Leakage	Not included	Optional levels	Optional levels	Optional levels	Optional levels
Frame/Sash Deflection Limits	AW and HC Hung ONLY	AW and HC ONLY	AW and HC ONLY	AW and CW ONLY	AW and CW ONLY
Glass Deflection Limits	Exception Noted	Exception Noted	Exception Noted	Exception Noted	Exception Noted
Frame/Sash Permanent Deformation	0.4% (0.2% for AW)	0.4% (0.2% for AW)	0.4% for R & LC, 0.3% for C & HC, 0.2% for AW	0.4% for R & LC, 0.3% for CW, 0.2% for AW	0.4% for R & LC, 0.3% for CW, 0.2% for AW
Forced Entry Resistance Standard	ASTM, CMBSO, or AAMA	ASTM, CMBSO, or AAMA	ASTM ONLY	ASTM ONLY	ASTM ONLY
Force to Latch requirement (SHD)	Not included	Not included	65 N (15 lbf)	Test and record only	Test and record only
Glass Strength Standard - basis of glass selection	ASTM E 1300-94 - use weakest glass for testing	ASTM E 1300-00 - use weakest & thinnest glass for testing	ASTM E 1300-02 - use weakest glass for testing	ASTM E 1300-02 - use weakest glass for testing	ASTM E 1300-09a - use weakest glass for testing
Hardware Lead Content Requirements	Not included	Not included	Not included	Not included	<b>Added</b>
Parallel Opening Windows	Not included	Not included	Not included	Not included	<b>Added</b>
Plastic Glazing Requirements	No Requirements	No Requirements	Added 6 requirements	No additional requirements	No additional requirements
Materials Referenced	Aluminum, Wood and Vinyl	Added 7 additional materials	Added 2 additional materials	No additional materials	No additional materials
Mullion Definitions and Illustrations	Definition Only	Examples & Illustrations	Expanded Explanation	Expanded Explanation	<b>Added new ratings and designations</b>
Secondary Storm Products	Not included	Not included	Not included	Not included	<b>Added new ratings and designations</b>
Skylights, Sidelites & Transoms	Not included	Added	Added & Expanded	Added & Expanded	<b>Added new designations for TDDs and eliminated Skylight Performance Classes.</b>
Side-Hinged Exterior Doors	Not included	Not included	Added	Included	Included
Side-Hinged Door Systems Operation/Cycling (Clause 5.3.6.10)	Not included	Not included	R (25,000), LC (100,000), C (250,000), HC (except ATD-500,000), HC (ATD-25,000), AW (except ATD-1,000,000), AW (ATD-25,000)	R (25,000), LC (100,000), CW (250,000), AW (except ATD-500,000), AW (ATD-25,000)	R (25,000), LC (100,000), CW (250,000), AW (except ATD-500,000), AW (ATD-25,000)
Side-Hinged Exterior Door Glazing Exception 5 (Clause 6.2.3.4.6)	Not included	Not included	Not included	Added - such specimens shall use the heaviest glass assembly that is to be qualified or shall have sufficient weight attached to the glazing to make it equivalent to the heaviest glazing assembly to be qualified.	Added - such specimens shall use the heaviest glass assembly that is to be qualified or shall have sufficient weight attached to the glazing to make it equivalent to the heaviest glazing assembly to be qualified.
Architectural Terrace Doors	Not included	Not included	Added	Included	Included
Limited Water Rating for SHD	Not included	Not included	Added	Included	Included
Primary Designator (example class R casement)	C-R25 30 x 60	C-R25 760 x 1520 (30 x 60)	C-R25 760 x 1520 (30 x 60)	Class R-PG25: Size tested 760 x 1520 mm (30 x 60 in)-Casement	Class R-PG25: Size tested 760 x 1520 mm (30 x 60 in)-Casement
Secondary Designator	Not included	Not included	Added	Added Prescriptive requirements identified in Clause 4.4.3.1 for the use of Secondary Designators	Prescriptive requirements identified in Clause 4.4.3.1 for the use of Secondary Designators
Use of Residential, Light Commercial, Commercial, Heavy Commercial and Architectural names in ratings	Included	Included	Deleted	Deleted	Deleted
Cycle/Operating Testing for SHD	Not included	Not included	Added	Included	Included
Hardware Water Testing for SHD	Not included	Not included	Added	Included	Included
Vertical Load Testing for SHD	Not included	Not included	Added	Included	Included
FER Testing for Swinging Doors	Not included	Not included	Added	Included	Included
Skylight Testing Orientation	Not included	Vertical or Sloped	Vertical or Sloped	Vertical or Sloped	Vertical or Sloped
Skylights Structural Test Load	1.4 to 3.0 times DP in 1600/I.S.7	1.5 x DP, Pos - 2.0 x DP Neg	2.0 x DP, Pos and Neg	2.0 x DP, Pos and Neg	<b>2.0 x DP, Pos and 1.5 x DP, Neg. Not necessary to apply a STP 100 psf higher than the rated DP</b>
Skylights Structural Test Duration	Not included	Neg 10s, Pos 60s	Neg & Pos 60s	Neg & Pos 60s	Neg & Pos 60s
Specimen Structural Damage	Same as previous editions	Adds actuating mechanisms, disengagements	Limits retests due to glass breakage or hardware to two	Limits retests due to glass breakage or hardware to two	Limits retests due to glass breakage or hardware to two
Deglazing Sash Movement	< 100%	< 90%	< 90%	< 90%	< 90%
Laboratory Test Report	Not included - in AAMA 103.3	Report format & Stamped dwgs	Report format & Stamped dwgs	Report format & Stamped dwgs	Report format & Stamped dwgs
Tempered Glass	Can be used for testing if it was the weakest, thinnest glass per ASTM E 1300 to qualify other glass types in production.	Can be used for testing if it was the weakest, thinnest glass per ASTM E 1300 to qualify other glass types in production.	Can be used for testing if it is the weakest per ASTM E 1300 and meets the L/175 requirement for edge deflection, to qualify other glass types in production.	Can be used for testing if it is the weakest per ASTM E 1300 and meets the L/175 requirement for edge deflection, to qualify other glass types in production.	Can be used for testing if it is the weakest per ASTM E 1300 and meets the L/175 requirement for edge deflection, to qualify other glass types in production.
Transoms	Not included	Maximum height is 700 mm	Maximum height is 800 mm	Maximum height is 800 mm	Maximum height is 800 mm
Tubular Daylighting Device (TDD)	Not included	Not included	Not included	Added	<b>Expanded to identify Closed Ceiling and Open Ceiling products</b>
Water Penetration Resistance Pressure Cap	12 psf	15 psf	12 psf	12 psf for U.S. 15 psf for Canada	12 psf for U.S. 15 psf for Canada

Reference Standards:	Title:
AAMA 101-93	Voluntary Specifications for Aluminum and Poly (Vinyl Chloride)(PVC) Prime Windows and Glass Doors
AAMA/NWDA 101/I.S.2-97	Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors
101/I.S.2/NAFS-02	Voluntary Performance Specification for Windows, Skylights and Glass Doors
AAMA/WDMA/CSA 101/I.S.2/A440-05	Standard/Specification for windows, doors, and unit skylights
AAMA/WDMA/CSA 101/I.S.2/A440-08	NAFS - North American Fenestration Standard/Specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/I.S.2/A440-11	NAFS 2011 - North American Fenestration Standard/Specification for windows, doors, and skylights