

| 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 | Separate Sections for products, materials, and components |
| 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 - Hard Conversion) |
| # of Product Operator Types | 20 | 26 | 30 | 31 | 36 |
| # 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 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 | Added |
| Parallel Opening Windows | Not included | Not included | Not included | Not included | Added |
| 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 | Added new ratings and designations |
| Secondary Storm Products | Not included | Not included | Not included | Not included | Added new ratings and designations |
| Skylights, Sidelites & Transoms | Not included | Added | Added & Expanded | Added & Expanded | Added new designations for TDDs and eliminated Skylight Performance Classes. |
| 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 | Included | 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 | 2.0 x DP, Pos and 1.5 x DP, Neg. Not necessary to apply a STP 100 psf higher than the rated DP |
| 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 is 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, 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 | Expanded to Identify Closed Ceiling and Open Ceiling products |
| 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 101-92 | 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 | | | | |