Arguably one of this industry’s historic achievements has been the development of a material-neutral, performance-based approach to standards, enabling window specification without sorting through prescriptive material-related parameters. The first result of this effort appeared in 1988, when the publication of ANSI/AAMA 101-88 combined aluminum and vinyl products under one set of requirements. Covering 14 product operator types, this was a great leap forward compared to the very first window standard issued in 1947, which applied only to double-hung aluminum windows, and defined just two classes of windows based only on size.

But, even 101-88 pales in comparison to today’s latest standard, AAMA/WDMA/CSA 101/1/ASD/I.S.2/A440-11, also known as the 2011 North American Fenestration Standard/Specification for windows, doors, and skylights (NAFS). Referenced in the 2012 International Building Code (IBC) and International Residential Code (IRC), NAFS-11 weighs in with 36 operator types and covers all framing materials including wood and various newer polymeric compounds such as fiberglass and cellular composites.

The original five performance classes (R, LC, C, HC and AW) were replaced by four (R, LC, CW and AW) in the 2008 edition and remain the same in the 2011 version. There is no change in minimum performance grade requirements for each class: R (15), LC (25), CW (30), AW (40).

Highlights of the NAFS-11 changes include:

- **A thorough restructuring.** R and LC grade windows and sliding doors are separated from CW and AW windows and doors into their own sections. Side-hinged doors of all classes and unit skylights/roof windows/tubular daylighting devices (TDDs) also have their own sections.
- **Five new operator types were added:**
  - **Parallel opening window (POW),** consisting of an operable sash that moves horizontally outward, remaining parallel to the plane of the frame.
  - **Secondary storm product (SSP)** — a door, window or skylight attached to the internal or external frame or sash of, a primary door, window or skylight to enhance thermal performance.
  - **Tubular Daylighting Devices (TDDs)** were expanded to include products for closed ceiling and for open ceiling options.
  - **The roof window (RW)** category has been split into two categories: glass glazed (RWG) and plastic glazed (RWP).
  - **The mullion assembly (MA)** category, defined as the unit formed by joining two or more individual fenestration units together with a horizontal or vertical member, was reorganized with new ratings and designations. Combination assemblies using mullions can be qualified by testing as a single combination unit or by testing as individual units, with mullion performance tested separately or calculated for air, water and structural performance in accordance with AAMA 450, Voluntary Performance Rating Method for Mulled Fenestration Assemblies.

A more detailed comparison of NAFS-11 with prior versions can be viewed at www.aamanet.org/general/1/461/nafs-overview.

- **Performance classes for unit skylights were eliminated,** leaving one minimum performance grade (30) corresponding to a design pressure (DP) of 30 psf. The structural test pressure is 200 percent of DP positive and 150 percent negative, with a water resistance test pressure of 4.59 psf.
- **Additional requirements for lead content in hardware.** The outermost surfaces of hardware intended for repetitive touch by the consumer must be tested for the presence of lead in accordance with ASTM E1753 (rhodizonate surface swab test). If the hardware part is coated, the coatings (e.g., paint, plating, oil or clear coat) are considered the outermost surface. If lead is indicated, the lead content must be confirmed by either test method A or test method B (brass and bronze only).
- **Clarification of requirements for even or uneven split two-lite single-hung windows** by incorporating Technical Interpretation (TI) 08-03.

Clearly, the growing breadth and depth of product materials, configurations and performance parameters has both challenged and benefitted our industry for decades and if anything, the pace seems to be accelerating.

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