



Quest to Capture Door Performance Spurs Standards Development

BY DEAN LEWIS

AAMA certification goes beyond basic performance assurance for completed door and window units by recognizing that a door or window is a complex, interacting system of components that must perform properly over a long service life. For this reason, as a prerequisite for their use in fenestration products that bear

the AAMA Certification Gold Label (extrusions or pultrusions, finishes, glass, insect screening, weatherstrip, sealants and hardware), must be qualified through separate, independent testing per the most current versions of the standards and test methods referenced in the North American Fenestration Standard (NAFS) AAMA/WDMA/CSA 101/I.S.2/A440.

Side-Hinged Doors

For some time, however, the side-hinged door (SHD) has presented a special and somewhat elusive case for component verification and product certification, owing to unique properties of both the product and its marketplace.

In terms of the marketplace, the primary issue is that of accommodating in-field substitution of components—a common practice for doors—and stay within a meaningful certification protocol for the finished product. While various groups work to resolve this problem, AAMA has, since 2004, offered interim certification of side-hinged doors to satisfy mandatory International Building Code (IBC), International Residential Code (IRC) and Florida

Building Code (FBC) requirements for structural loading and (optional) impact resistance.

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being the first door and window performance standard to establish unique specifications for side-hinged doors. This was made possible by an innovative performance rating concept and the development of specialized performance standards and test methods that accounted for the distinct functional differences and application realities of side-hinged doors. These differences stem primarily from accessibility requirements, water penetration and operating frequency.

For example, in terms of operating frequency, while a window may be operated once or twice a week, a side-hinged door may be opened and closed a half dozen or more times a day. Doors designed for these different environments must remain intact and operable under the expected conditions if they are to maintain resistance to environmental conditions.

AAMA Updates Standard Regard SHD

To address this aspect, AAMA 920-11, *Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems*, recently was updated for cycle testing of side-

hinged door systems and their associated hardware under accelerated operating conditions. The new edition clarifies the rate of application of open/close cycles prescribed by the test method, permitting a range of 12 to 24 cycles per minute at the test lab and/or manufacturer's discretion. Each cycle consists of opening the door

by 60 ± 5 degrees using a pneumatic/hydraulic piston and then closing it after a minimal dwell time in no more than 2.5 seconds using a similar piston or counterweight-and-pulley arrangement (or a self-closing device if applicable). This is performed on a sample product inclusive of all components (e.g., frame, threshold, door panel, hinges, weatherstripping and glass lite, if applicable). Locking hardware may be omitted for the test, but simulated by an added equivalent weight. The total number of cycles applied in the test increases with the Performance Class for which the door is intended, ranging from 25,000 for R Class doors up to 500,000 for AW Class doors—thus simulating operation over a long service life. The final test report is to include the cycle timing used in the test within the range of 12-24 cycles per minute. ■

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