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Manufacturing IG for Doors Versus Windows

Is There a Difference?

by Mike Burk

IG units in residential doors are secured with plastic frames and double gaskets and screws.

You may have seen it in an old television show or maybe you remember the days when workers would hang around the water cooler and discuss some off-the-wall topic or question. The location may have changed to the copier or fax machine, or even via e-mail, but the questions pop up just the same.

It is here that we heard co-workers discuss the possible differences in manufacturing insulating glass units installed in doors compared with those destined for installation in windows. The people who passed in and out of that copier room conversation could not reach a consensus. Most argued that the standards for high-quality insulating glass units would be the same for all products. A few believed that the door units might need to be more durable due to the impact caused by the door's operating cycle. We decided to contact residential and commercial door manufacturers and review current standards to find out.

Residential Doors

One engineer at a residential door manufacturing plant did not agree that insulating glass units in doors needed to be more durable. In fact, he explained that his company's insulating units may not perform well in a window—they were manufactured for doors. They were good units and performed well in residential door applications but he "would never put them in a window." He continued to explain that his units contain double gaskets and are secured in place with a frame containing a minimum of 18 screws. In addition, he described how most exterior doors are sheltered with an awning or overhang, reducing the amount of exposure to the elements. Throughout the visit, he remained adamant that insulating units in residential doors perform well throughout their lifespan. This manufacturer backs up this belief with its warranty. The company warrants the insulating glass in their doors for 20 years.

A review of a number of residential door and window manufacturer warranty programs yielded a wide range of policies regarding insulating glass in doors. There was a common thread that appeared in many of the policies. These limited warranties do not cover any door failure unless some type of shelter or awning was in place to protect the

Many commercial door suppliers ship only the doors, frames and gaskets.

exterior door from the elements. In some cases the requirements of the shelter were very specific. "Misuse of a door includes, but is not limited to, using a door on part of a building without providing adequate or an appropriate overhang … an overhang projecting a distance from the structure equal to one half the distance between the bottom of the door and the bottom of the overhang at the point farthest from the door," one says. Another excludes warranty coverage for doors "not protected by substantial overhang and exposed to extreme weather conditions."

Some residential door manufacturers inadvertently show more confidence in the insulating glass than the doors themselves. The doors are warranted to be free from "defects in material and workmanship for one year" while the insulating glass is warranted against "failure of the air seal for a period of five years." Another manufacturer might be indicating a lack of confidence by offering protection for "visible obstructions due to a failure of the insulating glass" for 20 years for its window products, while only five years for its entry door products.

On the Regulatory Side

Both the American Architectural Manufacturers Association (AAMA) and the Window and Door Manufacturers Association (WDMA) have developed standards for side-hinged entry doors (*see related article on page 30*).

The AAMA/WDMA/CSA 101/I.S.2 /A440-05 Standard/Specification for Windows, Doors and Unit Skylights defines the requirements for operating performance of side-hinged doors in section 5.3.6.10. This document also defines the testing of glazed doors and glazing selection in section 6.2.3.

The AAMA 920-03 Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems addresses door components in Section 8.6.

The AAMA Distance Education unit on Specifying Windows and Doors using Performance Standards includes a section titled "Dealing with Doors." When discussing the performance requirements it reads "A unique aspect of these requirements is that they recognize that side-hinged exterior doors are quite different from windows, sliding glass doors and their 'French door' cousins in three key aspects: accessibility requirements, operating frequency and water penetration." It continues "… such doors, however, are installed typically in weather protected areas."

Getting back to the initial copy room question, the answer is no, there appears to be no difference in manufacturing requirements for insulating glass units destined for installation in doors. In fact, throughout this investigation the issues encountered including residential versus commercial, the installer or manufacturer versus the architect, 20-year warranties versus five-year warranties, different spacer systems, and different sealant systems, the insulating glass unit appears to be the most constant and stable component. Standard insulating glass units manufactured by a certified insulating glass manufacturer and properly glazed will perform satisfactorily for the life of a door. ❙

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