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Making credible installation instructions available to all-

AWDI, LLC applauds the Energy Star concept of making installation instructions available to manufacturers to provide their dealers, installers, customers and even code officials on the internet. The reasons given in the October document are compelling and if fulfilled would make a positive change in in-service window performance.

There are two distinct types of instruction needed:

1. **New Construction** where the weather management of the wall/window interface can be built
2. **Replacement** where the weather management of the wall/window interfaces must be reconstructed.

Each will require different approaches and each will have different sources.

The AWDI approach to installation focuses on the concept of 5 Barriers. Briefly, each wall (and roof and floor) in a residence has to contain 5 barriers to effectively manage the environment:

1. **Water** – Exterior water such as rain, snow, etc.
2. **Moisture** – semi liquid “water” trapped behind the exterior siding caused by natural evaporation or condensation of wall components
3. **Air** – Movement of air by wind or pressure differentials
4. **Thermal** – Heat transfer
5. **Vapor** – Migration of warm moist air to drier cooler air

When constructing a new home, these barriers are constructed in the wall (siding, building paper, insulation, and vapor barriers, etc.) using defined building techniques as outlined in the various building codes and other guidelines. All windows have components that mimic these barriers such as weather-stripping, insulating glass, hollow frame members, resistance to corrosion and water penetration of the frames, to name some. The goal of integrating a new window or door into the properly constructed wall is to connect the appropriate barriers in the wall to their counterparts in the fenestration product, and/or add installation components such as drip caps, sill pans, and flashing to complete the barriers of both into a contiguous unit.

Building codes and window manufacturers, along with the engineering and architectural community have wrestled with this goal and have become more sophisticated in their techniques and recommendations. Industry effort has also created the ASTM E2112 fenestration installation standard along with groups such as FMA and others, together with the building codes, form a workable knowledge base for proper window and door installation for new construction

Replacement/Retrofit offers a tougher challenge. Replacement is by nature a destructive process. Old products are ripped out, pried out, and cut out exposing what could be termed a bunch of “cut wires”. The installation guidance for replacement products to succeed in re-establishing the 5 barriers needs to provide methods to re-connect the various barriers in the wall with their counterparts in the window.

This work needs to be done without the benefit of being able to reach behind the siding, or behind the interior wall paneling or even between the interior and exterior surfaces to make proper connections to be sure of the integrity of the barriers when finished.

AWDI, since its inception in 1989, has focused on retrofit installation. Our pioneering work in 1989 and 1990 formed the basis for the development of ASTM 2112 in general and so-called Methods A & B for weather stripping and flashing window openings. To be successful, our approach has been to recognize that fenestration products, for the most part, are consistent among brands, and we all recognize the consistent result we need to achieve in installation. The problem has been the inconsistent opening. The opening and the wiring, if you will, are not really exposed until after the rip out. It is then that the installer needs to be prepared to take the consistent product and achieve the consistent result in spite of the inconsistent opening.

AWDI has prepared many manuals and installation instructions for replacement and retrofit over the years and through consensus has available proper replacement instructions for most fenestration products, replacing most prime windows, in most constructions. These have been used for our successful pioneering certification and training of installers, and the recommendation we have received (into our 5th year) from Consumer Reports. (<http://www.consumerreports.org/cro/home-garden/home-improvement/home-windows/home-window-buying-advice/home-window-getting-started/home-window-getting-started.htm>) which says is part: "Readers who used an installer recommended by the window manufacturer were more satisfied overall than those who used contractors employed or recommended by Home Depot or Lowe's, according to our Home Improvements Survey. Also look for certification from the American Window & Door Institute (www.awdi.com)."

We have a body of work (45 segments) that is a prime resource for the basic elements needed to provide proper recommendations for installation of replacement windows for almost all conditions and situations. They contain instructions, illustration and photos. The problem becomes delivery of these instructions where needed and as needed for the conditions.

AWDI is preparing to fill our website www.howtoinstallwindows.com in January with all of these instructions. We are preparing a program where QR codes (as stickers applied to windows or printed on their labels) will allow smart phones to read the code and be brought immediately to the proper pdf file(s) for that window, for that use. We have tentatively named the process WIXSYS (Window Installation Instruction eXchange System). The WIXSYS QR Code system would be made available to all manufacturers. Funding/financial support would come from grant, advertising and/or sponsorship. The design will be similar to below. (This code goes to awdi.com)



Who is AWDI?

AWDI and Window Fitters Guild have provided training and resource materials for installing contractors to acquire meaningful certification credentials (since 1989), and we have been recognized for those efforts in Trade Publications and Consumer Reports Magazine — as a recommended source of qualified installers.

AWDI offers the only government registered Certification Mark for installation enjoying the same status as Energy Star does for performance, and we have longest running Internet presence (<http://www.awdi.com>) delivering window and door installation information on the world-wide-web since 1996.

Since our inception 20 years ago, our mantra has been “It won’t work right if it’s not installed right”. Our mission, along with that of the Window Fitters Guild Training Program, has been to help all installing contractors and workers have the tools and resources to create quality installations and operate successful businesses.

AWDI pioneered installation standards, and these initial efforts were used to create ASTM 2112. They have also been incorporated in comprehensive illustrated retro fit and new construction installation standards, practices, supported by fully detailed and illustrate manuals.