



# Constructive Insights

sponsored by

**THERMA-TRU**  
DOORS

## IN THIS ISSUE

### Severe Weather Construction

- Specifying a High-Performance Entry Door
- Understanding Wind Zone Requirements and Design Pressure
- Keeping Up With Codes
- Additional Resources for Builders and Remodelers

### Severe Weather Construction

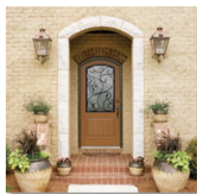
Over the last few years, Mother Nature has gone mad. According to the National Association of Home Builders, seven of the 10 most costly natural disasters in the United States have occurred since August of 2004. And if you search the number of declared disasters by year on the **Federal Emergency Management Agency's (FEMA)** Web site, you'll notice the numbers from the last decade are significantly higher than previous decades.

While weather-related disasters will continue to strike, and property will continue to be in its destructive path, home builders and remodelers can now tap into a multitude of products specifically designed to create homes less susceptible to damage and destruction from the weather—and products that look good vs. industrial.

The ultimate goal for weather-resistant products and construction is to reduce or eliminate a breach in the outer building envelope. If windows or doors fail under heavy rains and strong winds, a home can become internally pressurized, which can force the roof to lift off of the home or the exterior walls to explode outward. So it makes sense then that exterior doors and windows—components most vulnerable to severe weather damage—be specified carefully and to code.

### Specifying a High-Performance Entry Door

For builders and remodelers, all aspects surrounding residential door specification—the frame, lock system, hinges, material choice, structural performance ratings, seals, design (does the door match the home's architectural style?)—should be considered. Joe Adams, owner of J & C Adams, a window and door dealership in Cambridge, Mass., says even though his business is located in a historical area with older, traditional homes, his fiberglass door sales have increased significantly over the past several years because the material is so durable, maintenance free and looks and feels so much like wood. "Fiberglass doors don't move, twist or warp, which is important in our coastal area," says Adams. "They look and feel just like solid wood stained and painted doors. We steer customers to fiberglass quite often."



*Therma-Tru's fiberglass Rustic Collection™ doors are made like real wood doors with solid wood square edges, architecturally correct stiles, rails and panels, but won't split, crack or rot like wood doors. Plus, they offer five times the insulation of wood.*

**Click here** to view more high-performance doors from Therma-Tru.

Mark Collins, vice president of Gladstone's Window & Door Store, Maplewood, Minn., says 85 percent of the doors he sells are fiberglass because of their durability, heat and cold resistance, and design styles. Collins, who primarily sells to remodelers and homeowners, says he's noticed his customers have become more and more savvy about product form and function because of the Internet. "They're doing their homework online, which only helps our business," he says.

### Severe Weather Products for the Entryway

#### Tru-Defense®



Builders and remodelers can help protect homes from damaging weather and harsh conditions with Therma-Tru's Tru-Defense® fiberglass entry and patio door systems. These door systems are engineered to perform better in severe weather conditions like strong winds, hard driving rains and seasonal blizzards. The fiberglass entryway systems feature storm-resistant components such as a profiled sill designed for a tighter fit with the door, an innovative corner seal pad that effectively helps prevent water infiltration and a door bottom sweep that features dual bulbs and dual fins that sit tightly on the sill. Adding a multi-point lock increases security and stability for enhanced door system performance. For worry free protection against water leaks, drafts and structural performance, choose Therma-Tru's Tru-Defense fiberglass entry and patio door systems. Therma-Tru's Tru-Defense Entry System also received the **2007 Best of What's New Award** from *Popular Science* magazine.

#### Impact-Rated Glass



If your market requires impact-rated glass, Therma-Tru's new **impact-rated glass** line features a number of insert sizes and clear and decorative styles. And unlike other impact-rated glass, Therma-Tru's tempered glass faces outward while its laminated safety glass faces inward to avoid debris from entering a home. Therma-Tru's impact-rated glass also features a "Lip-Lite" frame, which is 30 percent thinner than other commercial-looking frames and has a cover that conceals

## Opaque Impact-Rated Fiberglass Doors



*Therma-Tru's new opaque impact-rated fiberglass doors include a steel plate underneath their surface for added strength and rigidity against hurricane-force winds and flying debris.*



Recently ranked as one of **100 Best New Products in 2008** by *Professional Builder* magazine, Therma-Tru's new Opaque Impact Rated Doors are designed for areas with the highest exposure to tropical storms and hurricanes. The doors have a patent-pending steel plate inside and are Florida code and High Velocity Hurricane Zone approved (Miami-Dade and Broward counties).

Nell Flowers, corporate marketing manager for REEB Millwork corp., which is headquartered in Bethlehem, Pa., and has distribution facilities on both the East and West coasts, says REEB sells more fiberglass than wood in all of its locations, although the percentage varies by location with the highest percentage coming out of its Barclay market. "Closer to the coast, our customers concentrate on fiberglass, where wood doesn't offer the same protection. Our customers understand the advantage of fiberglass doors and, of course, builders are always concerned about the number of callbacks," says Flowers. "Having three price points in fiberglass doors is a real benefit to our sales."

## Understanding Wind Zone Requirements and Design Pressure

**Building codes** designate Wind Borne Debris Regions and the High Velocity Hurricane Zone (HVHZ). In these areas, homes must be designed to withstand high winds and damage from flying debris, which means their components, such as windows and doors, must do the same. A Wind Borne Debris region is an area with wind speeds in excess of 120 mph and/or an area within one mile of the coast where wind speed is 110 mph or higher. In highly vulnerable counties, specifically Florida's Miami-Dade and Broward counties, stricter design and construction measures have been adopted, typically termed HVHZ, in addition to those required in Wind Borne Debris Regions.

Design Pressure (DP) ratings measure how resistant windows and doors are to positive and negative air pressure. These ratings include both positive and negative numbers, such as +60 and -60. The positive number corresponds to pressure created by wind blowing at a door from the exterior. The negative number represents the vacuum pressure created on the inside of a home. A DP-50 door performance rating indicates a door unit has passed a structural test pressure of 75 pound per square foot (test pressure is 1 ½ times design pressure), equal to 167 mph winds blowing at its exterior.

Steve Jaspersen, code compliance manager for Therma-Tru Doors notes, "DP ratings vary by area and by home. Two homes in the very same subdivision may require different DP ratings. Builders have to know their individual homes' ratings to make sure the products they are specifying meet code."

"At Reeb Millwork, we are constantly training our customers to make sure they understand DP ratings," says Flowers.

## Keeping Up With Codes

So, just who is responsible for coming up with building code rules and regulations? Actually, it's a combination of organizations, including state and local agencies. However, much of the country has adopted the standards set by the **International Code Council (ICC)**. The ICC came into existence in 1994 when three U.S. regional building code groups joined forces. Today, the ICC remains a non-governmental standards organization. The ICC is responsible for developing and disseminating 14 International Codes, including the International Building Code®, International Residential Code®, International Energy Conservation Code® and International Fire Code®.

Keeping up with building codes can be full-time job since they are constantly changing and can vary by state, county, city, town and even borough. In order to learn which codes are being used and how they will affect you and your construction project, contact your local building inspection department, office of planning and zoning, and/or department of permits. You may want to start by calling the most local government body that has jurisdiction over the property where you will be building. You should also ask for any local changes or modifications that may have been adopted by that local jurisdiction.

## Additional Resources for Builders and Remodelers

- The Federal Emergency Management Agency (FEMA) recently updated and expanded its **Coastal Construction Manual: Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas**. The *Coastal Construction Manual* is intended to help design professionals, state and local officials, and builders mitigate natural hazards to one- to four-family residential buildings in coastal areas. FEMA also produced a series of 31 fact sheets to provide technical guidance and recommendations concerning the construction of coastal residential buildings. [Click here](#) to download any of the individual Fact Sheets.

- The **Federal Alliance for Safe Homes (FLASH)** is a non-profit

organization dedicated to promoting disaster safety and property loss mitigation.

- The **Hurricane Construction Network** is an online help center for construction and code information, providing news and tips for builders and remodelers on safe and proper construction methods for building stronger, more durable homes.
- The **Institute for Business & Home Safety** (IBHS) is a nonprofit organization that works to reduce the effects of natural disasters and other risks to residential and commercial property. IBHS's **Fortified...for safer living®** program provides builders with an inspection and site location-based program to make homes more disaster-resistant.
- The International Code Council (ICC), a membership association dedicated to building safety and fire prevention, develops the codes used to construct residential and commercial buildings. Most U.S. cities, counties and states that adopt codes choose the International Codes developed by the ICC. At the **ICC's Web site**, users can click on a U.S. map to find which International Codes have been adopted state by state.