

# Orlando Sentinel

**New products can make houses much tougher; Roof adhesives and insulating foams have the potential to blunt hurricane winds.**

*David Bradley, the Associated Press. Orlando Sentinel.* Orlando, Fla.: Sep 18, 2005. pg. J.2

A second closed-cell product, spray polyurethane foam, was shown during 2004 hurricanes Frances and Jeanne to greatly improve roof strength, even when applied over shingles or tiles. The foam expands and hardens into a seamless, firmly adhered surface to fend off harsh winds that tend to lift and peel layers from a roof.

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Hurricane Katrina has spun its wrath upon the Gulf Coast states, and now the task of rebuilding awaits those returning to shattered or heavily damaged homes.

What materials will they use to rebuild? The Federal Emergency Management Agency encourages use of building materials that ward off wind loads or minimize damage in flood-prone areas. The materials hold promise, too, for homeowners in humid, damp locales.

Wall studs, sheet rock, insulation -- even paints -- have been re-engineered, if not outright invented, to give storm-ravaged homeowners a fighting chance before the next hurricane strikes.

The problem is Katrina and other such forceful hurricanes pack a three-pronged wallop. The first is ruinous winds, accompanied by drenching rains, followed by pervasive moisture that gives rise to mold and decay.

Thus, the main objective might be to replace common products with other options. There may be an uptick in initial costs for homeowners, but the long-term consequences can be advantageous. For instance, metal wall studs are far stronger than wood and some exterior wall systems that stand up to howling winds and rain.

Windows are points of easy entry for heavy winds. Andersen has beefed up its line of StormWatch vinyl-clad windows with impact-resistant glass reinforced with clear plastic laminate sandwiched between two panes to resist impact. Extra silicone glazing keeps the panes stable.

Jeld-Wen also makes a wood window that won't rot, swell or deteriorate in post-hurricane climates with a wood preservative called AuraLast. The process is environmentally friendly as well.

Walls are a primary line of home defense. Owens Corning's recently developed exterior system affords strength, rigidity and impact resistance. Insulated Polar Wall Plus vinyl-siding panels include a rolled-over double-nail hem reported to withstand winds to 200 mph. Each panel has "weep holes" at the bottom to allow water and moisture to escape.

Walls also gain tensile strength from the inside out. Honeywell promotes closed-cell foam sprays as a superior insulating product that also contributes to wall sturdiness. Batts of soft insulation do little to add muscle to walls, but this spray foam hardens quickly when applied between studs.

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FEMA rates closed-cell foams as the one insulation approved for use below the "base flood elevation plane" in "special flood-hazard areas."

The National Association of Home Builders says spray-foam panels withstood wind loads of two to three times above those supported by fiberglass-built panels.

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Leslie Chapman-Henderson of the nonprofit Federal Alliance for Safe Homes (flash.org) says "the real breakthrough in roofing is the use of premium polyurethane adhesives on the underside of roof decking to maximize roof performance against uplift." These super-glues combine with the usual method of nails and wood screws to affix plywood or wafer board to ceiling joists in a far more solid manner.

Homeowners also might apply new drywall that resists moisture and denies mold a feeding ground. DensArmor from Georgia-Pacific is covered by nonorganic plastic sheeting in place of paper. Expect to pay \$2 to \$3 per sheet more than typical drywall.

FEMA also recommends insulating concrete forms for foundations and above-grade walls. Twin foam walls are installed a foot or more apart, and the gap is filled with reinforcing rebar and pumped full of concrete.

Floors of nonwood materials such as tile or wood lookalike composites resist warping and the refinishing that water damage can force.

Even ultrathick paints add a margin of strength to walls. Some industrial coatings once limited to the commercial market have gained steam among homeowners.

PHOTO: Most homes damaged by Katrina weren't built with new storm-resistant materials. Experts say if they had been, damage may have been less. MARI DARR-WELCH/THE ASSOCIATED PRESS

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