

STRUCTURAL BUILDING COMPONENTS MAGAZINE

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Weathering the Storm Reflections on the 2004 Hurricane Season by Libby Walters

Photos submitted by Raymond Building Supply, Jim Swain of Carpenter Contractors and Chris Rizer of Builders FirstSource. Many thanks also go to Bob Becht of Chambers Truss, John Herring of A-1 Building Components LLC and Charlie Hoover of Alpine Engineered Products.

Immediately following Hurricane Charley's impact on southwestern Florida in August, Jay Crandell, P.E., Applied Residential Engineering Services, participated in a scientific damage survey of manufactured housing. While the findings and statistical results of the study are pending release of the report by HUD, Mr. Crandell did make some casual observations regarding other types of site-built construction, including metal plate connected wood trusses: "In general, damage to trusses appeared to be very rare. A relatively small percentage of site-built homes appeared to have some amount of roof sheathing loss. The most typical damage appeared to be from debris, fallen trees and modest siding/roofing damage. It was nothing like Hurricane Andrew (Category 4 over land) and only slightly more severe than Hurricane Opal (Category 2)."

Mr. Crandell conducted statistical studies of damage in both of those earlier events. "I describe Charley as a low Category 3 event in terms of its impact to populated areas. The construction that was damaged the most severely appeared to be damaged for obvious reasons (old, dilapidated, not designed for any wind consideration in the first place). Coupled with damage to key infrastructure, the area was hit pretty hard," he said.

MAXIMUM WIND SPEEDS

Charley: 145 mph; Frances: 105 mph; Jeanne: 115 mph; Ivan: 130 mph

ON FRANCES

"My neighborhood sustained 102 mph winds. Lost lots of tile, ridge caps, but nothing significant. I observed no structural damage and I traveled through three counties. I lost a commercial building, observed several airplane hangers severely damaged, and most all destruction was metal roofs, commercial buildings with flat roofs, and mobile homes. Lots of storm shutters were installed....power and phones were and still are a huge issue."

—John Herring, A-1 Building Components LLC, Boynton Beach, FL

U.S. LANDFALL LOCATIONS

Charley: Punta Gorda, FL • Frances & Jeanne: Sewalls Point, FL • Ivan: Gulf Shores, AL

ON FRANCES & FRANCES & JEANNE

"Chambers Truss sustained damage but we got power back the day after both storms. We were building trusses the second work day after both storms. We lost the roof and walls from a metal assembly building. That building is repaired today....Never take electricity for granted. I am used to getting in my car and driving, but last week we couldn't. Now the problem is gasoline, no electricity means no gasoline."

—Bob Becht, Chambers Truss, Inc., Fort Pierce, FL

CATEGORY AT TIME OF LANDFALL - (according to the Saffir-Simpson Hurricane Scale)

Charley: 4 • Frances: 2 • Jeanne & Ivan: 3

U.S. ESTIMATED INSURANCE LOSSES - (as estimated by www.iii.org as of September 27, 2004)

Charley: \$6.8 billion • Frances: \$4.4 billion • Jeanne: \$5-7 billion • Ivan: \$4-5 billion



An angry and threatening Hurricane Charley descends on Orlando.



This home was near completion in the Pine Island/Port Charlotte area and the homeowners were days away from moving in. The roof trusses held their ground.



A mobile home park in Punta Gorda, the location where Charley's eye blew through, suffered almost complete devastation.



At an Arby's restaurant in Port Charlotte, the structure's truss damage was minimal. Notice that the façade bracing was good.



At an Arby's restaurant in Port Charlotte, the sign fell off and hit the roof, breaking one truss member. These façade trusses performed well during the storm due to connections and bracing.



Post frame building with no sheathing; purlins blew off and connected properly and no permanent bracing.



(1 of 2) This home was built in the 1960s and is a total loss.



(2 of 2)



This condo was built in the 60s or 70s, next to Charlotte Harbor. There was no evidence of permanent web member bracing in the roof system and obviously, the plywood roof sheathing was not nailed in place to resist the uplift forces.



This home was built in 1979 and suffered substantial roof damage as wind blew out all the gables and the roll-up shutters on the lanai. However, the connectors between the trusses and walls performed quite well.



This condominium was built between 1960 and 1970. There is no evidence that the trusses were anchored to anything, and no connections or bracing.



This house shows that both roof trusses and I-joists are susceptible to damage in a hurricane.



This home built in 1984 sustained considerable roof damage. Again, the truss connections to the wall framing performed well.



Sheathing fastened with nails and staples.



Sheathing ripped off roof.



Plywood in tree and torn from the roof.

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