

Sealing Protective Window Films

*Dow Corning® 995
Silicone Structural
Adhesive*

“Dow Corning 995 [Silicone Structural Adhesive] was the strongest, toughest product we could find. We saw it as the best product out there, one that’s equal to the demands of [the 3M™ Ultraflex Window System].”

– Ken Smith,
Product Engineering Specialist,
Specified Construction
Products Department,
3M Corporation

Silicone Structural Adhesive Used to Glaze High-Performance Window System

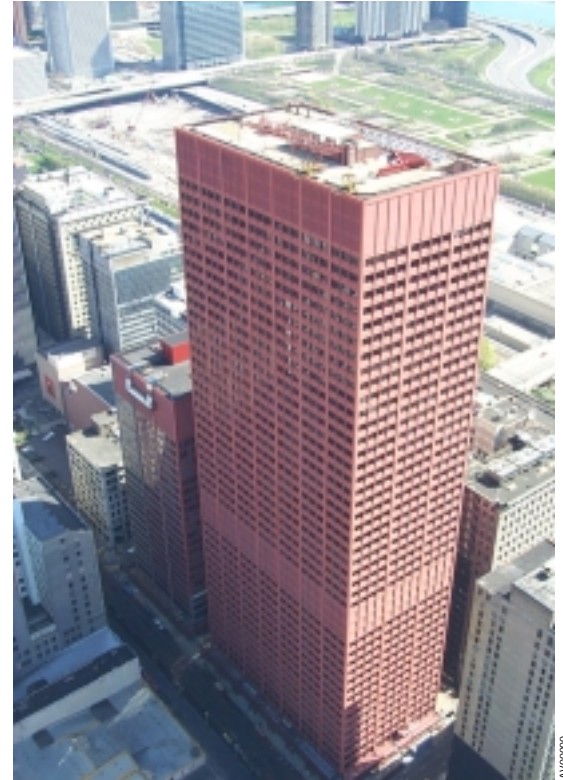
After pieces of glass fell out of a window opening in 1999 at the 45-story CNA Financial Plaza Building in Chicago, Illinois, the building owners decided to replace virtually all of the skyscraper’s 3,000-plus windows with heat resistant glass that would resist the thermal stresses that cause occasional cracks in the current windows.

But replacing all of the windows could take as long as five years. Rather than risk another incident during this period, CNA Insurance decided to install one of the new breed of protective window film systems used in hurricane-prone regions and to protect occupants and passersbys in bomb blast and impact (security) situations. After extensive testing, they chose the 3M™ Ultraflex Window System.

This “anchored film” system is comprised of 3M™ Scotchshield™ Ultra High Performance Safety & Security Film, a strong, multilayer polyester film that is adhered to the window glass, and *Dow Corning® 995 Silicone Structural Adhesive*, a high-performance glazing sealant used to anchor the edges of the film and to hold the lite in the window frame. Together, they create a protective system that helps absorb energy and allows the window frame to bend and twist. If the glass breaks, it remains adhered to the film and the window lite to the frame, increasing personal safety.

In the spring of 2000, two contractor teams began work at the CNA Plaza. One team removed the old sealant, leaving enough to hold the building’s windows in place during film installation. Following them, another team thoroughly cleaned the windows and frames and applied the film.

When the film was dry, a one-inch triangular bead of *Dow Corning 995 Silicone Structural Adhesive* was applied and tooled around the window frame, providing a 1/2-inch bite on both the film and the aluminum frame. A triangular bead is specified to provide the depth of sealant that produces added strength.



CNA Financial Plaza Building, Chicago, Illinois

continued

Dow Corning 995 adhesive was developed to tolerate the differential thermal and windload movements required in field and factory structural glazing applications. It offers an extremely high tensile adhesion strength of 150 psi and tear strength of 49 ppi. In other words, it offers the flexibility to help capture and absorb energy caused by severe and sustained windloads and sudden, hard impacts.

The only approved sealant for the 3M Ultraflex System, *Dow Corning 995* adhesive also satisfies the demanding impact/hurricane structural glazing standards required for new construction in Dade County, Florida, and meets bomb blast requirements for new structural glazing systems.

The CNA Plaza project was completed in September 2000, with 2,559 windows secured by the 3M Ultraflex Window System.

“We’re very pleased with the results,” said Bill Phillips, chief safety officer at CNA Insurance. “The fact that names like 3M and Dow Corning stand behind the product is very reassuring.”



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