

Case Study

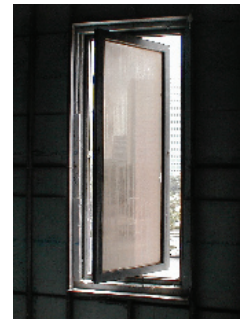
Tremco® Structural Silicone Glazing Case Study – Charles E. Bennet Federal Building Blast Mitigation



The Charles E. Bennett Federal Building in Jacksonville, FL designed in 1966, is an 11-story building made of pre-cast concrete panels with punched openings for windows. It was necessary to completely gut, remodel and modernize the building, including abatement for lead paint and asbestos from the top down. The renovation also included all exterior windows, which required the exterior glazing to meet the new federal blast resistance criteria.

Component compatibility is always a critical issue. It becomes even more challenging when the project is a retrofit. In this case, the building had an existing standard metal frame system. The 314,907-square-foot building has 1332 windows, which were originally caulked with a multi-component epoxidized polyurethane sealant.

Protective glazing systems are only effective when they are designed as a complete and unified assembly. This means incorporating the frame, the glass and the glazing components -- the sealant, gaskets, tapes, setting blocks and spacers, to work as a system. Incompatible components may result in a loss of silicone adhesion to the glass and metal surfaces. Tremco was the only manufacturer that supplied all of the glazing components and was perfectly suited to take on the project.



The protective glazing system designed included two custom rubber extrusions made from of a proprietary SCR-900 (Silicone Compatible Rubber) to support the glass. Over the years, Tremco has developed more than 12,000 custom extrusions. On this project, a custom spacer with a pressure sensitive adhesive was positioned below the metal sightline to accept a cap bead of structural silicone sealant on the exterior. While a round rubber shim was inserted between the glass and metal on the interior providing the proper compression and spacing for a cap bead of structural silicone sealant. The structural sealant bite, or sealant depth, is then key for proper performance and is determined based on the performance requirements to respond to

Architect:
**Quiroga Architects
Chartered**
General Contractor:
Skanska USA Building, Inc.
Contract Glazier:
TSG Industries

Tremco Products:
Proglaze® II
Spectrem® 1
Tremco Custom Extrusions

TREMCO®

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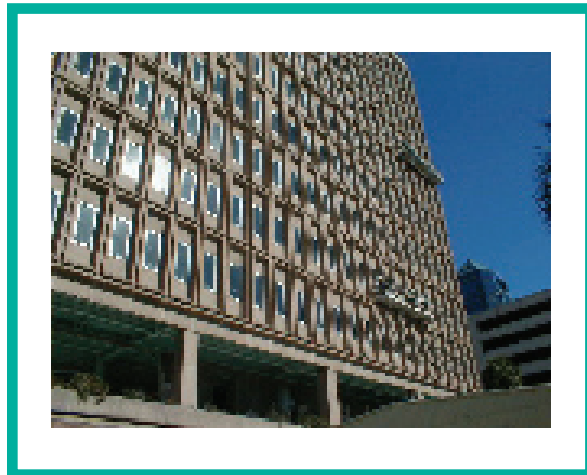
the threat/vulnerability assessment or code and the type/size of the glass.

The glazier selected for the job, TSG Industries in Valdosta, GA, fabricated the blast-resistant windows in their facility in Valdosta and were responsible for their installation on site. Proglaze II, a two-part, high modulus, structural silicone sealant, was used for the in-plant glazing. Instead of having to wait 7-14 days for a one-part sealant to cure, Proglaze II provided the superior quality and performance needed for the bomb blast requirements, enabling TSG to ship the windows the day after being caulked. To avoid any outlay of capital for the glazier, Tremco worked with TSG to optimize their production time and lower costs by providing the pump for the duration of the project. Tremco technical representatives worked closely with TSG to ensure optimal production of the components in the shop.

Once on site, the new blast-resistant window perimeters were sealed with Spectrem 1, a low modulus, high performance, one-part architectural grade silicone joint sealant to seal the window perimeters.

By having one supplier provide the sealant, gaskets, tapes, setting blocks and spacers within the protective glazing system; satisfying the performance tests required for blast-resistant systems is virtually ensured.

The Charles E. Bennett Federal Building is to be completed the summer of 2004.



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