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TROSIFOL

CASE STUDY

TAVARES PUBLIC SAFETY COMPLEX, FLORIDA

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English

STRUCTURAL & SECURITY

TAVARES PUBLIC SAFETY COMPLEX, FLORIDA

Known as America's Seaplane City, Tavares, northwest of Orlando, Florida, faces a very real risk of extreme weather conditions.

ADVANCED GLAZING SOLUTION HELPS ENSURE CONTINUATION OF FIRE AND POLICE OPERATIONS, EVEN IN EXTREME WEATHER CONDITIONS

With its modern architecture, appealing color scheme and proliferation of glazing, you could be fooled into thinking the City of Tavares Public Safety Complex is just another ordinary municipal building. But the new structure, officially opened in August last year, hides a secret.

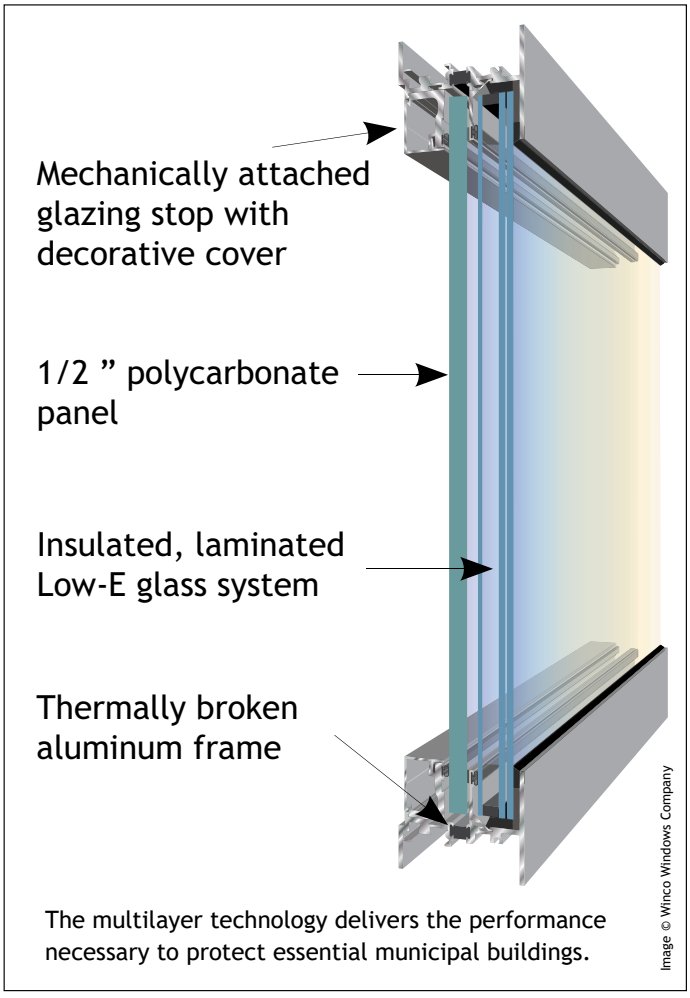
The new complex, which will house the city's police and fire departments, is a veritable Fort Knox, not just in terms of its concrete and brickwork, but also its windows, which are designed to stand up to just about everything Mother Nature can throw at them, thanks in part to SentryGlas® ionoplast interlayers from Trosifol.

The Fire Station element of the structure comprises four drive-through bays, kitchen and dining facilities and second floor sleeping and eating areas. The Police Station includes offices, a patrol room, a detective unit, a lab, a shooting range and a storage facility; alongside a gym and locker rooms, which are shared with the

Architects	Gator Sktch Architects
Glazing Contractor	Architectural Glass Services
Window Manufacturer	WINCO Windows Company
General contractor	Wharton-Smith, Inc.
Engineering	BESH

fire department. The facility also contains an emergency operations center, with a command center and overnight accommodation.

Known as America's Seaplane City, Tavares, northwest of Orlando, Florida, faces a very real risk of extreme weather conditions and, as a result, its buildings are subject to Florida's stringent building codes. In these extreme weather events, it is essential that the emergency services continue to operate in order to help protect and serve the local community. It is this 'continuation of service' that underpinned the methodologies behind the design and construction of this new structure.



The multilayer technology delivers the performance necessary to protect essential municipal buildings.

In many cases building ruggedness is perceived to come at an aesthetic price, especially in terms of windows. But modern multilayer window designs and robust frames, coupled with highly capable laminated glass interlayers, have resulted in buildings that are not only safe, but also ones that deliver a pleasant, airy and naturally lit working environment.

This project was for an ‘Essential Facility Risk Category 4’, so had to meet tornado requirements.

The 40,000 ft^2 (3,716 m^2) facility makes wide use of framing and glazing from WINCO. The company’s 3350 series fixed windows have been tested and found to comply with FEMA P-361 standards (Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms, Third Edition – 2015). These windows are capable of withstanding the impact of a 15 lb (6.8 kg) 2 x 4 in (5 x 10 cm) timber traveling at 100 mph (160 km/h).

According to Kurtis Suellentrop from WINCO Windows Company: “The panels are multilayered insulating glass units, with polycarbonate on the inside, a low-e glass panel in the center and a panel laminated with SentryGlas® on the outside. The laminated panel on the outside gives hurricane-level protection, while the polycarbonate on the inside delivers tornado-level protection. This combination also provides the owner with a durable window solution with outstanding acoustic, thermal and weather-resistant protection for the occupants during normal building operation.

“This project was for an ‘Essential Facility Risk Category 4’, so had to meet tornado requirements. From a physics standpoint,” he continues, “the kinetic-energy impact force from tornadoes is exponentially higher than a hurricane large-missile impact, as the impact energy is a function of the square of the speed. We are seeing these types of panels used in applications, such as schools and government buildings, throughout the Mid-South and Tornado Alley.”

Tony S. Chang, Project Manager at Architectural Glass Services, Inc., the project’s glazing contractor explains: “WINCO windows were specified for this project as many of the other suppliers shortlisted did not have products tested to FEMA 361/ICC500.”

“The Police Department side of the building has products that meet the ICC500 requirements,” Chang continues, “and on the Fire Department side there are two impact-resistant curtainwall systems, one being compliant with ICC 500 and the other rated for Large Missile Impact (LMI) and Small Missile Impact (SMI).”

Tavares Fire Chief and project manager Richard Keith explains: “The windows are a significant part

Trosifol is the global leader in PVB and ionoplast interlayers for laminated safety glass in the architectural segment. With the broadest product portfolio Trosifol offers outstanding solutions:

- **Structural:** Trosifol® Extra Stiff PVB and SentryGlas® ionoplast interlayer
- **Acoustic:** Trosifol® SC Monolayer and Multilayer for sound insulation
- **UV Control:** from full UV protection to natural UV transmission
- **UltraClear:** lowest Yellowness Index in industry
- **Decorative & Design:** black & white & colored interlayers

of the project. Prior to this, our facilities were seriously aging and inadequate. Now, during emergencies, we'll be protected by the enhanced glazing. For the rest of the time, those same windows allow natural light to flow into the buildings, creating a welcoming environment for our staff and citizens. The City has received compliments on the windows, with comment about the pleasing blue tint and on how "delicate" they look. Little do they know that these windows are an integral part of the security envelope of our highly-strengthened exterior."

The windows are designed to stand up to just about everything Mother Nature can throw at them, thanks in part to SentryGlas® ionoplast interlayers.

HAVE YOU DONE A GREAT PROJECT WITH OUR TROSIFOL® OR SENTRYGLAS® PRODUCTS AND YOU WOULD LIKE TO HAVE IT FEATURED IN OUR LAMINATED GLASS NEWS?
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