

Case Study:

Sentryglas[®] ionoplast interlayer provides safer, stronger, more durable glass railing system for Kirby Drive Tower in Texas

The frameless glass railing system that now covers all 143 balconies of the 30-storey luxury condominium tower at 2727 Kirby Drive in Houston, Texas, is another outstanding demonstration of the qualities and capabilities of SentryGlas[®] ionoplast interlayer.

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The frameless glass railing system installed at 2727 Kirby Drive, a 30-storey luxury condominium tower block in Houston, Texas. 143 balconies were retrofitted with C.R. Laurence's patented CRL L56S Series TAPER-LOC® Glass Railing System and SentryGlas® ionoplast interlayers.

The glass railing construction used on the balconies and pool deck railings, which were designed by architects CDC Curtainwall Design Corporation, comprise a 14 mm (9/16") tempered laminated glazing that uses SentryGlas® 1.52 mm (0.60") thickness interlayer supplied in 6 mm tempered x 1.52 mm x 6 mm (¼" x 0.60" x ¼") tempered glass makeup. These were fitted to CRL-Blumcraft 324 series Top Rail, custom powder coated with Newlar El Cajon Silver. In total, more than 1,067 meters (3500 linear feet) of glass railing systems were retrofitted to 143 balconies.

For this project, SentryGlas® ionoplast interlayer was specified by CDC Curtainwall Design Corp. and C.R. Laurence Co. (CRL), a leading global manufacturer and supplier to the glazing, architectural, railing, construction, industrial and automotive industries. CRL's L56S Series TAPER-LOC® Glass Railing System was also specified for this application. This system is based on

CRL's patented TAPER-LOC® X System, a completely dry glazed system for securing glass panels into the base shoe. This system requires no messy expansion cement, is 50 percent faster to install compared to traditional systems, and does not affect the performance of the laminate interlayer.

According to Chris Hanstad, brand manager at CRL: "Our goal here is to build railing systems that are safer, stronger but still offer brilliant transparency. We selected SentryGlas® because it was found to be safer and stronger than alternative laminates and is also extremely clear, which means residents get virtually crystal clear, unobstructed views from their balcony. Kirby Drive is a luxury apartment building; so aesthetics also were very important. SentryGlas® offers excellent weathering durability with no discoloration, creep or delamination issues."

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Lighter façade panels enable more subtle supporting structures

For decades, interlayers made of polyvinyl butyral (PVB) have been the industry standard when producing laminated safety glass. Architects are well aware of the possibilities and limitations of such glass when used extensively in façade engineering, for roofing and window panels. In contrast, SentryGlas® enables an entirely new approach because the interlayer is over 100 times stiffer and five times stronger than PVB. As a consequence, there is an almost perfect transmission of load between two laminated sheets of glass, even at high temperatures, leading to the excellent flexural behavior of the glass when under load - also under direct sunlight in high summer. Accordingly, laminates with SentryGlas® show less than half the rate of deflection when compared to laminates with PVB, when under the same load, and thus almost the same behavior as monolithic glass of the same thickness.

SentryGlas® is more than 100 times stiffer and 50 percent stronger than PVB alternatives. Due to the strength of the interlayer, SentryGlas® demonstrate excellent postglass-breakage performance. Upon impact, the glass may break, but dangerous fragments will adhere to the SentryGlas® interlayer, reducing the risk of injury to people in the vicinity.



CRL's 200 Series ARS Aluminum Railing System was retrofitted to the pool deck areas at Kirby Drive. SentryGlas® was chosen because it is safer and stronger than alternative laminates and is extremely clear, giving residents virtually crystal clear, unobstructed views from their balconies. SentryGlas® also offers excellent weathering durability with no discolouration, creep or delamination issues.

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As well as improved strength and stiffness, other benefits of SentryGlas® include:

- **Safety:** In the event of breakage, glass fragments remain firmly bonded to the interlayer, reducing the chance for injury
- **Security:** SentryGlas® can be used in glazing that withstands bullets, hurricane-force winds and even bomb blasts
- **Durability:** SentryGlas® is extremely durable and resistant to clouding, even after years of exposure
- **Design Versatility:** SentryGlas® can be used in glass manufactured flat or curved, including annealed, toughened, heat-strengthened, spandrel, wired, patterned and color tinted glass
- **UV control:** SentryGlas® is available with or without UV transmittance

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