



## John Hancock Tower Case Study

# Window Film Provides Decades of Safety for John Hancock Tower in Boston, MA.



*Madico developed a pressure-sensitive safety film that when attached to the window frames using a decorative mullion would hold broken glass in place and prevent dangerous shards from injuring pedestrians walking below the 600 foot tower.*

### Project Summary:

Installer: Sonny's Glass Tinting

Type of Film: Clear 4 mil (CL 400 PS SR)

Installation Date: 1986

Windows Covered: 10,344 windows

Performance Evaluation Performed: 2009

### The Challenge:

The impressive John Hancock Tower was completed in 1978 and forever changed the Boston skyline. A design marvel created by one of the world's most famous architects, Henry N. Cobb, it immediately became one of the city's most recognizable buildings. Unfortunately, the Hancock Tower's innovative design had a flaw; the glass kept falling out of the windows! The building came to be known by locals as "The Plywood Palace" due to the 3,500 plus pieces of plywood used to replace the fallen glass.

Numerous steps were taken to correct the flaw; counterweights were installed at both ends of the building to minimize sway, every window was replaced with thermally tempered glass, and the entire structure was stiffened with the installation of additional steel bracing throughout. These efforts alleviated many of the issues but did not completely eliminate the glass breakage. Finally, a window film manufacturer, Madico, Inc., was brought in to help solve the glass breakage problem.

### Madico's Solution:

Working in conjunction with the renowned Massachusetts Institute of Technology, Madico developed a safety film that when applied to glass with a pressure-sensitive adhesive and attached to the window frames using a decorative mullion would hold the broken glass in place and prevent dangerous shards from injuring the pedestrians walking below the 600 ft. tower.

### Results:

In 2009, Madico had the opportunity to test the original safety film applied to the Hancock Tower 24 years prior. During this evaluation Madico tested for peel value (the force needed to remove the film from the glass and a measure of how well the film will hold onto the glass when broken), tensile strength (the actual strength of the PET - polyethylene terephthalate) and UV blocking (the amount of ultraviolet radiation blocked by the film).

The results were enlightening, peel value remained +/- 3% of the original manufactured material, tensile strength tested at over 90% of its original value, and UV blocking maintained nearly 95% of its original blocking power. Madico prides itself on making the highest quality window safety film available. By having the opportunity to test safety films that have been in place for nearly a quarter of a century, Madico can say with unmatched confidence that its safety films will continue to protect people and property from glass failure, natural disaster and even criminal activity for decades.