ARE YOU ALLOWING DATA THIEVES TO LISTEN, MONITOR AND STEAL YOUR COMMUNICATIONS?

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June 2017

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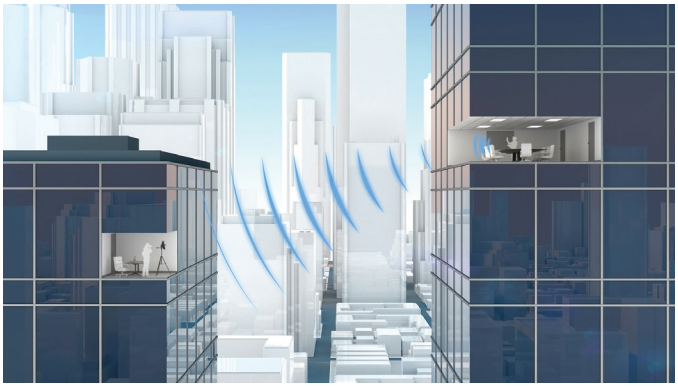
GLASS IS EVERYTHING™

Many working professionals lead digitally centered lives, and with it, they demand access to a never-ending stream of information via text or email, which allows them to work from anywhere and everywhere. Organizations and their employees want Internet and Wi-Fi connectivity on the go. Meetings are often conducted via conference call, Skype or other digital means.

With this digital communication exchange, there comes the opportunity for electronic eavesdropping. Organizations, large and small, are at risk of cyber thieves who might be right outside their building (or located up to a mile away) listening in to their Wi-Fi-transmitted communications.

With the growing number of publicized data breaches, an increasing number of companies have invested in cyber security measures to prevent hackers or organized crime from infiltrating their computer systems through phishing or malware. However, many cyber security professionals are starting to realize those investments may not go far enough in preventing cyber thieves from eavesdropping on a company's data and telecommunication transmissions.



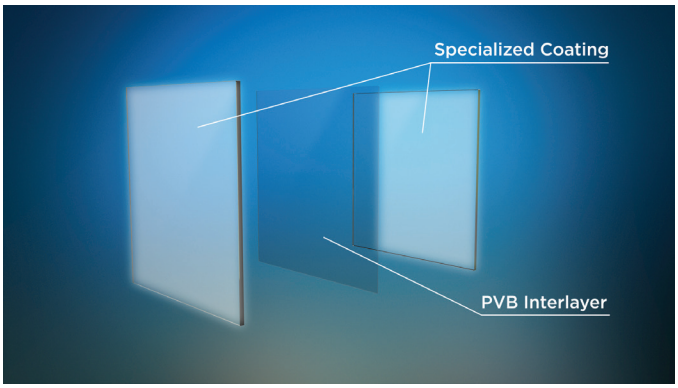
Often overlooked, one of the front lines of defense to electronic eavesdropping is a building's exterior. Most of today's corporate buildings and skyscrapers are enveloped by glass. When Wi-Fi signals make their way through the glass exterior of a building, hackers can access, monitor and steal information. In response to this vulnerability, manufacturers in the glass industry have developed products that improve the barrier qualities of glass against electronic eavesdropping.

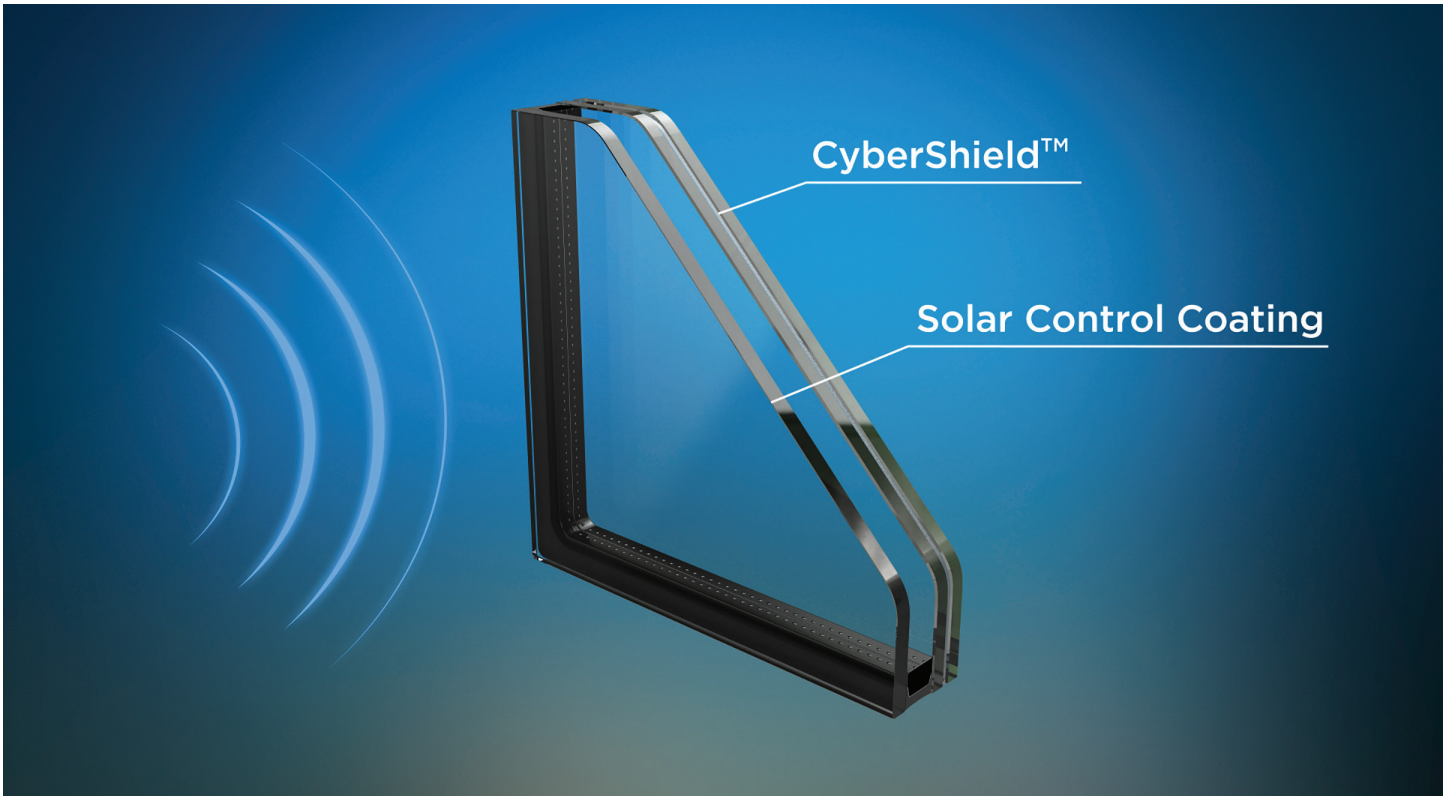
OPTIONS FOR SECURE GLASS

- **Window film**, which is field applied to the glass, and offered by many regional and local glass film dealers. The film is a transparent barrier that allows light to pass through, while minimizing transmission of wireless (Wi-Fi), radio frequency (RF), and other electronic signals. It is a thin layer that also helps reduce UV rays, but adds a tint to a glass surface. The material is subject to cracking or peeling, which may leave room for signals to escape.

- **Triple silver low-e coatings**, glass coatings were developed to minimize the amount of ultraviolet and infrared light that can pass through glass without compromising the amount of visible light that is transmitted. The coatings are microscopically thin and able to block electromagnetic waves due to their silver content. The silver in the coating produces a distinct color hue, which is visible to the eye and can be difficult to disguise, even when placed as the inboard of an insulating glass unit. Designers who are looking for a uniform façade are required to add the cyber security product to the whole façade as a result, even if certain areas that do not need the added security.

- **Specialized coatings**, such as Pilkington's DATASTOP™ offer a more comprehensive method of signal blocking. DATASTOP is a glass substrate with a specialized, high light transmittance coating specifically engineered to reduce the transmission of certain electromagnetic





frequencies. Like triple silver low-e coatings, specialized coatings can be manufactured in a laminated configuration with a polyvinyl butyral (PVB) interlayer.

- **Specialty fabrication** offers best-in-class data security and uniform aesthetics, which can be achieved with a product such as Viracon's CyberShield™. The process of fabricating CyberShield leverages Pilkington's DATASTOP substrate for the interior laminated glass unit and configures that unit with an exterior lite, featuring attributes chosen based on the building's aesthetic and solar requirements. Any typical glass color and low-e coating can be constructed into the insulating laminated glass unit with CyberShield situated as the interior laminate. Viracon's fully fabricated CyberShield product is unique in that it has been tested and meets ASTM F3057 standards.

Unlike triple silver low-e coatings, which often have a distinguishable appearance, CyberShield does not have a discernible difference in appearance from non-CyberShield units. CyberShield can be discreetly placed throughout a façade, without broadcasting which offices are used for confidential purposes. CyberShield has been used in a range of government and corporate applications. Government law enforcement agencies as well as national financial institutions are among the organizations implementing CyberShield to protect sensitive information.

CYBER SECURITY TESTING AND STANDARDS

When assessing options for secure glass, building owners and developers must consider whether the glass option will meet a set of standards known as the ASTM F3057 Standard Test Method for Electromagnetic Shielding Effectiveness of Glazings. This test was developed in order to standardize a measurement procedure for glazings or glazing configurations, and it assesses EMI transmittance from 100 kHz to 20 GHz.

The reason: Wi-Fi represents only a portion of the signal. There are other wavelengths and signals that run at different frequencies and different entities, which transfer different kinds of information.

Today's electronic devices typically operate between 100 kHz and 20 GHz; cell phones transmit around 1.9 GHz and wireless networks around 2.4 GHz. Glass products on the market are usually secure to IEE 2009 standards. However, many of these products have not been tested to ASTM F3057 Standard Test Method, which is the most up-to-date standard available. Viracon's fully fabricated CyberShield product is one of the only products on the market that meets ASTM F3057 standards.

DESIGNING WITH AN ANTI-EAVESDROPPING GLASS SOLUTION

When designing a new building or retrofitting an existing building to reduce the risk of eavesdropping, consider the following:

Edge Deletion -- While triple silver low-e coatings and window films are viable options, they do not extend to the edge of the glass due to "edge deletion," the process of removing the coating from the periphery of the glass in order to be sure it maintains integrity and does not corrode. This coating removal also removes electromagnetic protection, resulting in a waveguide, which allows signals to pass through the perimeter of the panels. A fully fabricated solution such as Viracon's CyberShield utilizes a specialized coating that can be exposed without degradation concerns, thus requiring no edge deletion. This creates a complete barrier when installed with conductive gaskets or conductive silicone, which improves performance and increases a building's value.

Design -- Specialized fabrication of anti-eavesdropping glass offers more design flexibility. For example, Viracon's CyberShield can be the inboard of any insulating laminated unit, so the full range of coatings, glass colors, silk-screen and digital printing are available for use with the system. This is one of the many reasons architects find this to be a versatile solution -- any typical glass color and low-e coating can be selected to meet the building's aesthetic and solar requirements. This means the material is not only protective, but aesthetically pleasing.

Specialized fabrication also offers more flexibility in office layout design. Historically, many conference rooms or spaces that needed to remain secure were often placed in the center of a floor or space in order to ensure maximum insulation from electronic spies. With a product able to fully cover windows and offer extra security, conference facilities and officials' offices can be located in a wide range of spaces on a floor, enabling all workers to experience the benefits of natural light.

Cleaning and Maintenance -- Glass is beautiful, but requires regular cleaning to maintain its clarity. Window films not only require cleaning, but also additional maintenance as they're prone to scratching and peeling. A fully fabricated solution such as CyberShield requires no more maintenance than regular glass. As a result, CyberShield is a cost-effective solution for building owners who want to reduce maintenance and cleaning costs while increasing information security.

BOTTOM LINE ON CYBER SECURITY

As more information is transmitted at higher frequency channels and higher speeds in the future, anti-cyber espionage material selected to protect secure spaces needs to be good today and flexible enough to meet the demands of tomorrow. CyberShield by Viracon offers such a solution.

When protecting sensitive data behind beautiful glass facades is essential, the addition of CyberShield will boost the buildings security and value.

To learn more about Viracon's CyberShield anti-eavesdropping glass product, visit viracon.com

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