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WINDOW FILM 101:
An Introduction to Window Film in the Classroom

Back to school! Although it's September, the autumn sun can heat up classrooms, zapping the energy of students, teachers and staff alike. An installation of window film on classroom windows significantly reduces heat gain in warmer months and heat loss in cooler months. Additionally, a window film retrofit improves safety and security, minimizes temperature imbalances, lowers a facility's utility expenses and reduces heating and ventilation equipment maintenance expense.

With aggressive state and municipality mandates to lower energy usage, energy conservation efforts have been stepping up in schools and institutions. Window film retrofits have been recognized as a cost-effective energy conservation measure for buildings with excessive energy usage and occupants complaining of being "too hot" or "too cold" due to energy inefficient windows. A quick, clean installation of window film can be done for a fraction of the cost of window replacement -- and there is minimal disruption compared to the major construction associated with removing and replacing windows.

Using DOE approved software such as E-Film (an algorithm-based energy simulation software program), a manufacturer's authorized window film dealer can provide an energy analysis report and return-on-investment projection specific to a building's size, shape, location, exposure and HVAC equipment. Many window films qualify for LEED credits. An E-Film comprehensive energy analysis report provides architects, engineers and facilities managers data to help achieve their sustainability goals through the installation of LEED rated window films.

Demand for improved safety and security for schools and universities has increased with the rise in security threats and unpredictable weather patterns. Windows are the Achilles heels of any building. Safety and security films provide an invisible shield of protection for building occupants.

Repercussions of NOT installing security window film can be devastating. By holding glass in place, a strong security film helps reduce injuries and property damage resulting from flying shards of glass and exposure to the elements caused by explosions, violent weather and vandalism.

A good security film will meet ANSI Z97 and CPSC glazing standards. Relative to a film's ability to absorb shock, the higher the tensile strength and elongation; the better the performance in blast and impact mitigation. A manufacturer's authorized dealer can provide testing information results along with other window film specifications including visible light transmitted and reflected, solar energy and UV light rejected, glare reduction, shading coefficient, emmissivity and U value.

3M Company began the history of window film in 1966 when a patent application was granted for a metalized solar control window film. Since that time, research and development teams have responded to demands for better energy conservation, safety and security, non-metalized and optically clear films. Currently, film types include metalized, non-metalized, polyester, ceramic, optically clear, tinted, opaque, architectural, interior designer and anti-graffiti films. Once referred to as "tinting", most films today are virtually invisible with little if any noticeable "tint". However, films that provide privacy, block light, add architectural design elements or provide a uniform appearance to an otherwise cluttered window display are installed commonly today. Depending upon desired results, there is most likely a window film to meet any job specification.

Do your homework. Note the number of years the manufacturer has been in the business of window film. Naturally, the more a particular film has been applied in the field, the more reliable the data for performance. A manufacturer that uses its own adhesives is a plus. Window film is only as good as its adhesive. A bad adhesive will produce bubbling and blistering -- distortions created from thermal cycling that can result in seal failures.

Choose an ISO 9002 certified facility and a manufacturer committed to research and development. Verify that you are working with a manufacturer's authorized dealer. An authorized dealer will be happy to have you check with their distributor or manufacturer for confirmation of their status as a dealer. An installation by a manufacturer's authorized dealer that employs professionally trained installers will assure quality work and the security of a manufacturer's warranty. With a plethora of films on the market, choice becomes a challenge. Knowledgeable window film representatives can help guide you to the best selection for your particular needs. cost effective insulating window film.

Peter J. Davey is president of American Window Film, Inc., a 3M™ Authorized Prestige Window Film Dealer.; Foxboro, MA, Boston, Atlanta; www.americanwindowfilm.com; 800-274-TINT.