

DAS Shield™ Surface-Applied Film Technical Data Sheet

DAS SHIELD™ is designed to increase In-Building wireless deployment options for DAS (Distributed Antenna Systems) and Small Cells as well as for helping contain Wi-Fi footprints for enhanced security. External Macro Cell signals can be attenuated minimizing interference and thereby allowing improved efficiency and potentially simpler and less expensive installations.

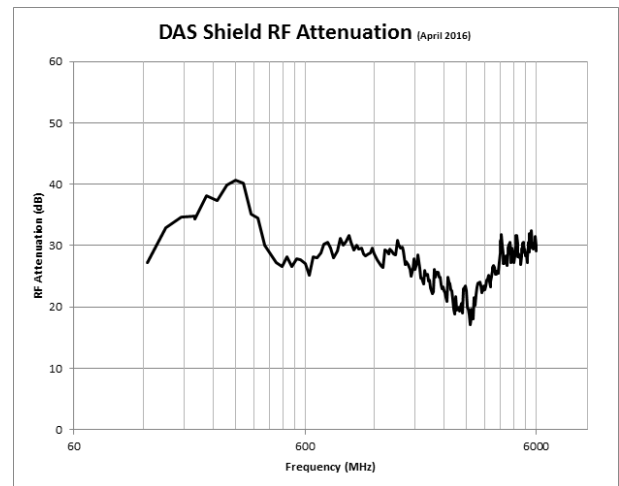
DAS SHIELD™ is a component of architectural Shielding Technology which is a set of materials and application techniques primarily aimed at attenuating RF signals from entering or leaving buildings. DAS SHIELD™ is applied to window interiors to attenuate RF Signals while maintaining high Visible Light Transmission. The technology also has secondary benefits including safety, energy savings, and UV protection.

PERFORMANCE CHARACTERISTICS

RF Attenuation (700 MHz – 6 GHz)	Avg >24dB
IR Transmission (940 nm)	< 17%
Ultraviolet Transmission (<380 nm)	< 1%
Visible Light Transmission (400-780 nm)	70%
Visible Light Reflectance (400-780 nm)	8%
Total Solar Energy Rejected	50%
Shading Coefficient	0.51
Solar Heat Gain Coefficient	0.44
Estimated Thickness	0.002"

BENEFITS

- ◆ Reduce RF interference at building exterior resulting in potentially lower DAS power requirements and fewer/smaller remotes and antennas
- ◆ Minimizes “Macro Cell” interference with 4G LTE DAS deployments, especially in dense urban environments
- ◆ Added security for WLAN (Wireless Local Area Network) or 802.11 and other wireless technologies
- ◆ Energy savings and possible LEED credits
- ◆ EMI (Electromagnetic Interference) and PMI (Passive Modulation Interference) reduction and RF Shielding
- ◆ UV (Ultraviolet) Protection for fade control and health



PRODUCT OVERVIEW

Intended Use:

RF attenuation for buildings with Small Cell and Distributed Antenna Systems. DAS Shield creates a signal differential at the window to ensure Cellular connectivity is made with the In-Building Wireless system.

Areas of Application:

Buildings intended to operate Small Cell and Distributed Antenna Systems

MATERIAL SAFETY

See film and sealant Material Safety Datasheets (MSDS)

STRUCTURE

Multiple layers of metal and metal oxides, including silver, silver oxide, indium tin oxides, and others, sputter coated on PET surface at the angstrom level.

Adhesive Type:

Clear Distortion Free (CDF)

APPLICATION

Areas of Application: Interior and exterior glass.

Surface Preparation: The glass surface to which the shatter-resistant window film is to be applied should be clean and free of paint, foreign compounds, smears, and spatters.

Sealant: Dow Corning 995

Curing Period: 7-60 days

STORAGE

Store in a cool, dry place. Keep packages closed to prevent contamination.

CARE AND MAINTENANCE

For best results, clean windows with a soft, clean, rubber squeegee, cotton, or microfiber cloth and common household -strength liquid glass cleaner such as Windex®, GlassPlus®, or silicone cleaner/polisher specifically made for window films.

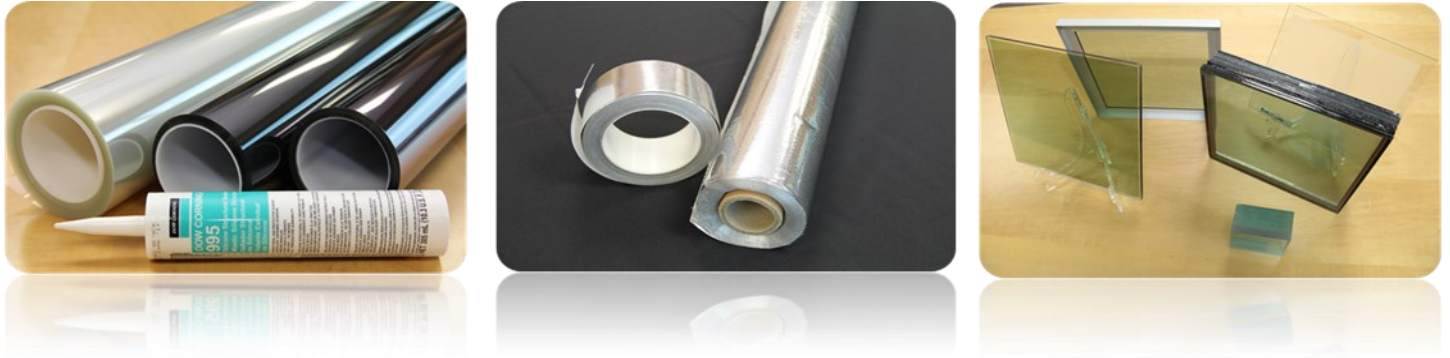
WARRANTY

Signals Defense™ signal protection film is warranted against crazing, cracking, peeling, demetalizing, bubbling and delaminating, for a period of 3-10 years from the date of original installation and subject to existing glass conditions. Additional extended warranty available upon request and with prior approval. Full terms, conditions, and warranty information is available upon request.

Architectural Shielding

Since 2000, Signals Defense's patented surface applied window films and glass products have been the U.S. Government's choice for TEMPEST film protection. Signals Defense window technology provides high Radio Frequency (RF) and Infrared (IR) attenuation with high visible light transmittance and low reflectivity resulting in minimal aesthetic impact. As a result of the high attenuation provided by SD Technology, existing buildings fitted with windows may be converted to Sensitive Compartmented Information Facilities (SCIF) ICD 705 standards. SD Technology is available in Film, Glass, and Polycarbonate. Mesh and foil architectural shielding materials are also available.

From a TSCM (Technical Surveillance Counter-Measure) perspective, Signals Defense Films is the least expensive method to mitigate the largest amount of eavesdropping and espionage techniques.



About Us

Signals Defense, LLC began operations in Owings Mills, Maryland in 1999. With the introduction of an innovative optically clear window film technology that provides high RF (Radio Frequency) and IR (Infrared) attenuation for RF Shielding and Thermal Imaging Defense purposes. We have extended our product line to include products designed to enhance in-building wireless systems such as DAS (Distributed Antenna Systems) and Small Cell deployments.

Our technology has been deployed on over 1,400 locations providing our clients (including Government Intelligence agencies, DOD, and Fortune 100 companies) with US DoD strength emission security systems. The benefits also include providing safety and energy savings by employing Ultraviolet blocking and glass fragmentation /spall control window films. Our products also include glass and polycarbonate IGUs and pre-constructed panel inserts.

Signals Defense is your building shielding expert and is available to help with any government or commercial building shielding. From security window films to custom motorized blinds or decorative films, Signals Defense is your one-stop for building shielding.



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