

Advanced Cool Shield Series Automotive Window Film

Revision 0

Introduction

Avery Dennison® Advanced Cool Shield is a high-performance, hybrid safety film that combines an outstanding phantom black color solar control film with safety laminate that keeps shattered glass in place. Advanced Cool Shield film protects against heat, glare and harmful UV radiation. The film is optimised with metallized polyester and color-stable dye to ensure low exterior reflectiveness.



Face Film

100 micron (4mil) Phantom black PET (polyester) – High-Performance Hybrid Safety automotive window films combined safety film



Backing

PET (polyester)



Shelf Life

When stored in the original packaging upon arrival at the customer: 2 years. Recommended Storage conditions are 10-35 °C with 50 %RH (± 5%)



Adhesive

Pressure Sensitive Adhesive (PSA)
Permanent - acrylic



Warranty

Lifetime*
*Limited to original private car owner.

Features

- High performance hybrid safety film; giving optimal heat & glare protection with minimal mirror effect
- Enhanced glass security; keeps shattered glass in place
- Easy & speedy installation/great ease of handling with controlled shrink
- Excellent solar performance, > 99.% UV block
- Scratch-resistant hardcoat for scratch-free installation and maintenance
- Superior Aesthetics, optical clarity and color stability
- High clarity adhesive; no smears or smudging

Conversion

The product is designed for automotive window tinting purposes and is easy to size by manual cutting during application. Material should be applied using the wet application method.

Recommendations

Commonly applied on the internal side of glass substrate of:

- Personal Vehicles
- Commercial and Fleet Vehicles

Before applying the product, the user shall determine the suitability of the product for its intended use. The user shall ensure that the application and the intended use of the product is in accordance with any and all applicable laws and regulations concerning the use of automotive window film, and the user assumes all risk and liability in connection therewith.

Optical & Solar Properties

	ACS 15
Visible Light Transmitted	15%
Visible Light Reflected (Exterior)	7%
Glare Reduction	84%
Total Solar Energy Rejected (TSER)	54%
Ultraviolet Block	99%

Performance results are calculated on 6mm clear glass using NFRC methodology and LBNL Window 5.2 software, and are subject to variations in process conditions within industry.

Definitions

Visible Light Transmitted (VLT)

The percentage of total visible light (380-780 nanometers) to be passed through a glazing system. Test method - ASTM E 903-96.

Visible Light Reflected (VLR)

The percentage of total visible light to be reflected by a glazing system. Test method - ASTM E 903-96.

Total Solar Energy Reflected

The percentage of total solar energy (300-2500 nanometers) to be reflected by a glazing system. Test method - ASTM E 903-96.

Total Solar Energy Transmitted

The percentage of total solar energy (300-2500 nanometers) to be passed through a glazing system.

Total Solar Energy Absorbed

The percentage of total solar energy (300-2500 nanometers) to be absorbed by a glazing system. Solar absorption is that portion of total solar energy neither transmitted nor reflected. Since solar transmittance and reflectance are measured directly, the following equation is used for calculating solar absorption. Test method - ASTM E 903. Total solar energy absorbed = $100\% - (\text{Total solar energy reflected}) - (\text{Total solar energy transmitted})$.

Selective IR Rejection (SIRR)

The percentage of IR radiation that does not directly transmit through a glazing system. Calculated as $\%SIRR = 100\% - \% \text{Transmission} (@780\text{nm}-2500\text{nm})$.

IR Energy Rejection (IRER)

The percentage of energy rejected of Near Infrared as measured between 780-2500nm. This is the equivalent of the SHGC measuring only the NIR range, and is more accurate than the SIRR as it takes in consideration both reflected and absorbed energy reradiating. Calculated as the TSER over 780-2500nm: $\%IRER = 100\% - 100 * \text{SHGC} (@780-2500\text{nm})$

Ultraviolet Block

The percentage of Ultraviolet radiation (300-380 nanometers) to be blocked by a glazing system. Ultraviolet is one portion of the total solar energy spectrum which greatly contributes to fading and deterioration of fabric and furnishings.

Shading Coefficient (SC)

The ratio of the solar heat gain through a given glazing system to the solar heat gain under the same conditions for clear, unshaded double strength window glass (DSA). Shading coefficient defines the sun control capability or efficiency of the glazing system.

Glare Reduction

Glare usually defined as being the difficulty of seeing in the presence of bright light such as direct or reflected sunlight or artificial light such as car headlamps at night. Window film can provide glare reduction of up to 95%.

Total Solar Energy Rejected (TSER)

Measures the window film's ability to reject solar energy in the form of visible light, infrared radiation and ultraviolet light. The higher the TSER number, the more solar energy is rejected away from the window.

Mechanical Properties

Tensile Strength at Break	ASTM D-882	1800	kg/cm ²
Break Strength	ASTM D-882	19	kg/cm ²
Elongation at Break	ASTM D-882	110	%
Impact test	BS 6206	Class A	

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use.

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