V-KOOL® 40

MAXIMUM PERFORMANCE ADDED PRIVACY.

Industry-leading technological expertise has allowed the scientists who created V-KOOL® to configure visible light transmission and infra-red rejection attributes of the coating to suit different market needs. An impressive example can be seen in V-KOOL 40. While V-KOOL 75 and 70 were engineered for applications where visible light transmission requirement is high, V-KOOL 40 is darker in appearance to V-KOOL 75 and 70.

For applications requiring lesser visibility and maximum solar control, V-KOOL 40 fits the bill by offering a staggering 98.3% rejection of infra-red radiation from the sun. Again, spectral-selectivity means that while V-KOOL 40 almost completely eliminates infra-red radiation from penetrating your windows, it still allows 40% of visible light to pass through.

Product Highlights

Visible Light Transmission	42.8%
Infra-Red Rejection	98.3%
Ultra-Violet Rejection	99.0%
Shading Coefficient	0.42
Emissivity	0.55
U-Value	0.94

1. Purpose

This product specification provide the requirements for the V-KOOL 40 applied solar control window film.

2. Related Documents

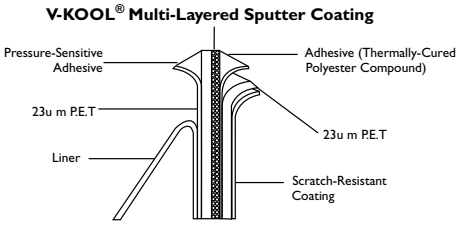
ASTM Test Methods and Standards

3. Product Specifications

3.1 Construction

The illustration below shows the standard construction of the **V-KOOL®** applied film.

V-KOOL® Multi-Layered Sputter Coating



3.2 Substrate

a. Sputtered PET - Typically 0.92g clear biaxially oriented PET.
b. Sputtered PET - A 0.92g clear biaxially oriented PET.

3.3 Sputtered Coating

Metallized on the non-slip coated side with an metal/metal-oxide coating stacks designed to reduce solar heat transmission and to meet exacting performance standards.

3.4 Lamination Adhesive

Typically a PET type.

3.5 Mounting Adhesive

1.5 micron - Acrylic pressure sensitive (PS)

3.6 Hard Coat☆

a. Ultraviolet cross linked acrylic clear coating.
b. Abrasion resistance must meet performance standards:

3.7 Release Liner

Clear silicon coated PET (<2% haze) liner placed over the mounting adhesive.

3.8 Physical Defects

Physical defects, such as scratches, spots, coating inclusions, wire lines, gravure lines, coating voids and creases which are visible under normal lighting conditions in final laminated product are not acceptable.

3.9 Roll Configuration

a. Length: 100' rolls or as specified on purchase order (PO)

b. Width: 60"

3.10 Nominal Physical Properties

a. Tensile Strength : 18 Kg/mm^2 (26Kpsi) - (TD)
18 Kg/mm^2 (26Kpsi) - (MD)

b. Melting Point : 254°C

c. Expansion Coefficient : 1.7 x 10^{-5} mm/mm/°C

3.11 Typical Optical Performance

	3mm Clear Glass
Visible Light Transmission	42.8%
Visible Light Reflectance	10.3%
Infra-red Transmission	1.7%
Ultraviolet Transmission	0 - 2%
Shading Coefficient	0.42
Total Solar Transmission	20.6%
Total Solar Reflectance	25.7%
Total Solar Absorption	53.6%
Total Solar Energy Rejection	65.0%
Emissivity	0.55
U-Value (Btu/h.ft^2.F)	0.94

* Data collected on a Perkin Elmer Lambda 9 spectrophotometer.
* All performance values calculated using Lawrence Berkeley Laboratories Window 4.1 Fenestration Program.

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Abrasion Resistance @ 100 cycles and under 500g weight	<6% after abrasion	ASTM D-1044