



THE EPITOMY OF SPECTRAL-SELECTIVITY.

The spectral selectivity in **V-KOOL**® window coatings is a significant breakthrough in Surface & Particle Science and the window film industry.

Winner of the coveted Technology Of The Year Award in 1989, **V-KOOL**® coatings is the world's first and only spectrally-selective window film that offers new possibilities to architects, interior designers, auto manufacturers, car and home owners.

The **V-KOOL**® range of films (75, 70, 40) have unique performance that is unrivalled. V-KOOL 70 provides a superior mix of high visible light transmission at 70% as well as high infra-red and ultra-violet rejection at 94% and 99% respectively.

Already a well received solution for many architects and car owners around the world, V-KOOL 70 epitomises the qualities of a true spectrally-selective coating.

V-KOOL 70 is currently used in auto applications ranging from retrofit to OEM on Audi, Renault, BMW, Mercedes, Volvo, Volkswagen and Opel as well as retrofit OEM for Nissan and Jeep.

Architectural projects commonly employing V-KOOL 70's glass enhancing qualities range from retail outlets, penthouses, atria, to air control towers. V-KOOL 70 is the clear choice when it comes to projects with high visibility and heat rejection requirements.

Product Highlights

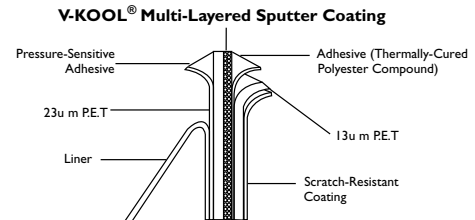
Visible Light Transmission	73.2%
Infra-Red Rejection	94.0%
Ultra-Violet Rejection	99.0%
Shading Coefficient	0.50
Emissivity	0.60
U-Value	0.94

1. Purpose
This product specification provide the requirements for the V-KOOL 70 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.



3.2 Substrate
a. Sputtered PET - Typically 0.92g clear biaxially oriented PET.
b. Sputtered PET - A 0.48g 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/mm² (26Kpsi) - (TD)
18 Kg/mm² (26Kpsi) - (MD)
b. Melting Point : 254°C
c. Expansion Coefficient : 1.7 x 10⁻⁵ mm/mm/°C

	Typical Optical Performance	
	Film Alone On	3mm Clear Glass
Visible Light Transmission	73.2%	70%
Visible Light Reflectance	9%	8%
Infra-red Transmission	6%	<6%
Ultraviolet Transmission	2%	0 - 2%
Shading Coefficient	-	0.5
Total Solar Transmission	-	35%
Total Solar Reflectance	-	26.5%
Total Solar Absorption	-	38.5%
Total Solar Energy Rejection	-	55%
Emissivity Absorption	-	0.6
U-Value (Btu/h.ft ² .F)	-	0.94

* The performance of **V-KOOL**® film alone is tested by the Singapore Institute of Standards and Industrial Research (SSIR)
* Data collected on a Perkin Elmer Lambda 9 spectrophotometer.
* All performance values calculated using Lawrence Berkeley Laboratories Window 4.1 Fenestration Program.

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