V-KOOL® 75 *Applications*

A CLEARER VIEW. A COOLER WORLD.

Leading our range of spectrally-selective coatings in visible light transmittance is V-KOOL 75. While looking deceptively clear, V-KOOL 75 is a full-fledge, spectrally-selective coating with good solar heat rejection properties. The performance behind V-KOOL 75 lies in its complex multi-layer thin coatings of metallic substances, such as silver. Although the total heat rejection is not as high as V-KOOL 70, the key advantage of V-KOOL 75 is its high visible light transmission 77% which is higher than the requirement of Transport Department for Front Screen.

Typical applications for V-KOOL 75 range from automobile, retail shopfronts, restaurants, art galleries to residential glass with very high visible light transmission requirements.

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

VK 75 Product Highlights

Visible Light Transmission	77%
Infra-Red Reflection	77.14%
Ultra-Violet Rejection	99.0%
Shading Coefficient	0.63
Emissivity	0.56
U-Value	5.45

V-KOOL 75 Specifications

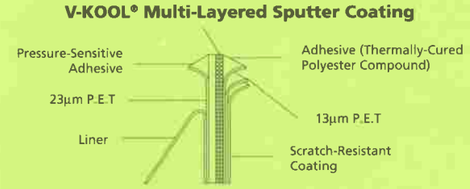
1. Purpose
This product specifications provide the requirements for the V-KOOL 75 applied solar control window film.

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 0.42g clear biaxially oriented PET.

3.3 Sputtered Coating
Metallized on the non-slip coated side with pure silver/ indium-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:

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

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

3.11 Typical Optical Performance

Visible Light Transmission	77%
Visible Light Reflectance	9.5%
Infra-red Reflection	77.14%
Ultraviolet Rejection	99%
Shading Coefficient	0.63
Total Solar Transmission	47.3%
Total Solar Reflectance	22.5%
Total Solar Absorption	30.2%
Total Solar Energy Rejection	45.45%
Emissivity	0.56
U-Value	5.45

3.12 Fire Resistance
Product should be tested under BS476 Part 7 and with result of class one.

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