



**MAXIMUM PERFORMANCE ADDED PRIVACY**

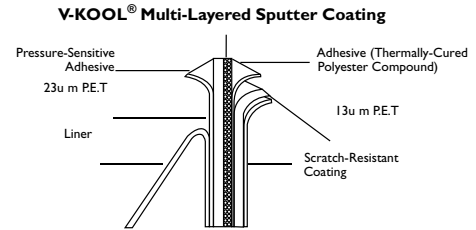
Industry-leading technological expertise has allowed the scientists who created V-KOOL® to configure visible light transmission and infra-red rejection attributes of the coating to suit different market needs. An impressive example can be seen in iQUE 43FG / V-KOOL VK40. While iQUE 78FG and 73FG / V-KOOL VK75 and VK70 were engineered for applications where visible light transmission requirement is high, iQUE 43FG / V-KOOL VK40 is darker in appearance to iQUE 78FG and iQUE 73FG / V-KOOL VK75 and VK70.

For applications requiring lesser visibility and maximum solar control, iQUE 43FG / V-KOOL VK40 fits the bill by offering a staggering 98.3% rejection of infra-red radiation from the sun. Again, spectral-selectivity means that while iQUE FG43 / V-KOOL VK40 almost completely eliminates infra-red radiation from penetrating your windows, it still allows 40% of visible light to pass through.

Spectrally Selective 43FG	
Colour	Green
Visible Light Transmission	44%
Visible Light Reflectance (Glass)	12%
Visible Light Reflectance (Film)	10%
Ultra-violet Rejection	99%
Total Solar Energy Rejection	64%
Luminous Efficacy	1.06
Solar Heat Gain Coefficient	0.36
Shading Coefficient	0.41
Emissivity	0.85
U-Value (btu/hr.ft <sup>2</sup> .°F)	1.05

\* Film tested on standard 3mm clear annealed glass and specifications are subjected to variations under intervening conditions.

1. **Purpose**  
This product specification provide the requirements for the iQUE 43G / V-KOOL VK40 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 0.42g 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**<sup>☆</sup>
  - 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<sup>2</sup> (26Kpsi) - (TD)  
18 Kg/mm<sup>2</sup> (26Kpsi) - (MD)
  - b. Melting Point : 254°C Celsius
  - c. Expansion Coefficient : 1.7 x 10<sup>-5</sup> mm/mm/°C
- 3.11 **Typical Optical Performance**  
Refer to the table at the left side

\* 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
---	--------------------	-------------