

## PERFORMANCE DATA – InfraCOOL<sup>®</sup> MIST GREEN vs Std Mist Green

### KEY FACTS : HEAT REFLECTIVE COATINGS

- Due to their large surface area and exposure, Roof Surfaces can capture large amounts of the Sun's energy and thus COOL ROOFS offer potential energy savings.
- Dulux<sup>®</sup> InfraCOOL<sup>®</sup> Technology works by maximising the TOTAL SOLAR REFLECTION including the (invisible) infra-red portion of the Sun's energy which accounts for approx. 50% of the suns total light energy.
- Various internationally accepted verification methods demonstrate the potential benefits of InfraCool<sup>®</sup> Technology in comparative testing vs comparable std colour and/or surface materials.

### ASTM E1980-01 : SOLAR REFLECTANCE INDEX

The following comparative test data (based on constant solar conditions as defined) demonstrates the estimated surface temperature cooling benefit using Dulux<sup>®</sup> InfraCOOL<sup>®</sup> technology against the nominated system.

Total Solar Reflectance (TSR) and Thermal Emittance are measured and then used to estimate resultant Surface Temperature		Std Mist Green	Dulux <sup>®</sup> AcraTex <sup>®</sup> COOL ROOF MIST GREEN
<b>Total Solar Reflectance</b>	ASTM C1549 (% TSR)	21.7 %	42.3%
<i>Reflectance of light across the broad solar spectrum inc. visible (colour) and invisible InfraRed radiation</i>			
<b>Thermal Emittance</b>	ASTM C1371 (0-1 scale)	0.85	0.90
<i>The ability of a material to release (ie. emit) captured heat energy. Higher number = Faster Heat release</i>			

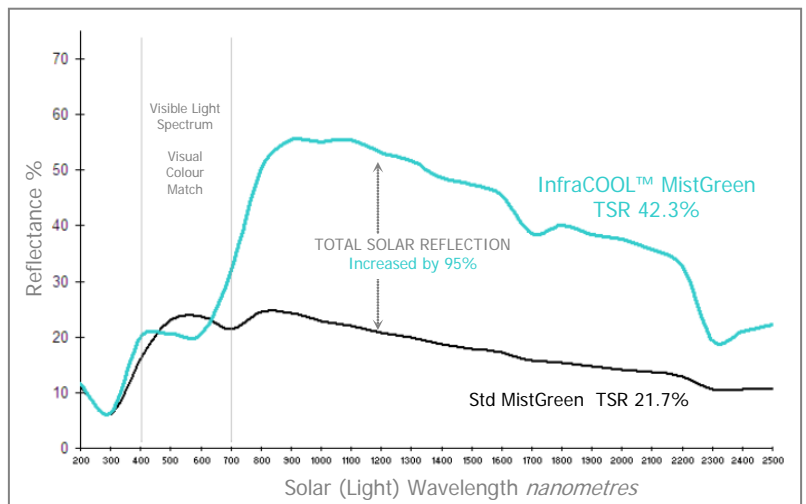
ASTM E1980 defines a mathematical equation for Calculating Solar Reflective Index and Estimating resultant Surface Temperature		Test Method defines reporting to 3 wind speeds : Low, Medium & High Medium wind conditions are most typically observed in Australia					
		Low	Medium	High	Low	Medium	High
<b>Calculated Solar Reflectance Index</b>	<i>relevant to wind conditions</i>	17.17	18.96	20.55	47.82	48.23	48.60
<b>Estimated Surface Temperature</b>	<i>Maximum relevant to wind conditions</i>	94	75	57	77	64	51
<b>InfraCOOL<sup>™</sup> effect</b>	<i>Maximum Potential surface temp. COOLING relevant to wind conditions</i>	Low Wind potential		Medium Wind potential		High Wind potential	
<i>Calculations based on constant conditions and 3 wind categories in accordance with ASTM E1980 Air temp ( 37°C ), Solar flux (1000 W/m2), Wind Speeds Low, Medium, High corresponding to (5, 12, 30 W·m<sup>-2</sup>·K<sup>-1</sup>) respectively.</i>		17 °C		11 °C		6 °C	

### ASTM E903: SOLAR ABSORPTANCE :

Total Solar Reflectance (TSR) and Spectral Reflectance of 2 visually equal panels is measured at individual wavelengths from 200-2500 nanometers

Results:

- ❖ Matching reflectance (intersecting lines) in the visible light region confirm the colours are close visual matches.
- ❖ Significantly higher reflectance of InfraCool<sup>®</sup> across the infrared region (separation of the lines above 700 nm).
- ❖ TSR (Total Solar Reflectance) increased from 21.7% to 42.3% (95% increase) with InfraCool<sup>®</sup> Technology.



### COLOUR CLASSIFICATIONS :

Solar Absorptance (SA)	
Std (SA)	InfraCOOL <sup>®</sup> (SA)
0.783	0.577

Building Code of Australia (BCA) Classification		
Criteria (SA)	STD rating	InfraCOOL <sup>®</sup> rating
Very Light : <0.4	DARK	LIGHT
Light : 0.4-0.60		
Dark : >0.6		

NSW Building & Sustainability Index (BASIX) Classification		
Criteria (SA)	STD rating	InfraCOOL <sup>®</sup> rating
Light: <0.475	DARK	MEDIUM
Medium: 0.475-0.70		
Dark : >0.70		

InfraCOOL<sup>®</sup>...Colours that shield from the sun