

## PERFORMANCE DATA – InfraCOOL™ MID GREY vs Std Mid Grey

### KEY FACTS : HEAT REFLECTIVE COATINGS

- Due to their large surface area and exposure, Roof Surfaces capture enormous amounts of the suns energy and thus COOL ROOFS offer potential energy savings of 10-30%\*, resulting in direct cost and green house gas emission savings
- Dulux® InfraCOOL™ technology works by maximising the TOTAL SOLAR REFLECTION including the (invisible) infra-red portion of the suns energy which accounts for over 50% of the suns total light energy
- Various internationally accepted verification methods demonstrate the direct benefits of InfraCool 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) demonstrates the calculated surface temperature cooling benefit using Dulux® InfraCOOL™ technology against the nominated system.

Total Solar Reflectance <i>% TSR ASTM E903 or C1549</i> <i>Reflectance of the suns energy across the broad solar spectrum including</i>	Std Mid Grey			Dulux® AcraTex® COOL ROOF Mid Grey				
	<ul style="list-style-type: none"> <li>• <i>visible region , defining the colour we see</i></li> <li>• <i>non visible region, mainly Infra-red (approx 50% of Total Suns rays)</i></li> </ul>	21.7 %			41.00%			
Thermal Emittance <i>0-1 scale, ASTM C1371</i> <i>The ability of a material to release (ie. emit) captured heat energy</i>	0.85			0.90				
	<i>Wind condition...</i>			<i>low</i>	<i>medium</i>	<i>high</i>	<i>low</i>	<i>medium</i>
Solar Reflectance Index <i>relevant to wind conditions</i>	17.17	18.96	20.55	46.09	46.51	46.90		
Surface Temperature <i>constant air temperature : 37C</i> <i>constant Solar flux : 1000 W/m2</i>	94	75	57	78	65	52		
InfraCOOL™ effect <i>potential surface temp. COOLING</i>	<b>16°C COOLER</b> <i>low wind conditions</i>							

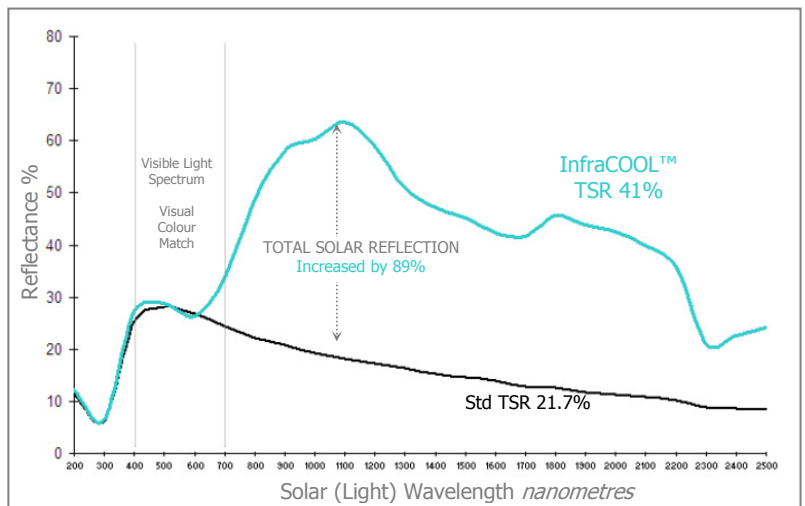
### ASTM E903 : SOLAR ABSORBANCE

TSR and Spectral Reflectance is tested in accordance with ASTM E-903.

% Reflectance of 2 visually equal panels reported 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 across the infrared region (separation of the lines above 700 nm).
- ❖ TSR (Total Solar Reflectance) increased from 21.7% to 41.0% (89% increase) with InfraCool™ Technology.



### COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)	
Std (SA)	InfraCOOL™ (SA)
0.783	0.590

Building Code of Australia (BCA) Classification		
Criteria (SA)	STD rating	InfraCOOL™ rating
Light : <0.55 Dark : >0.55	DARK	DARK

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

❖ Energy saving potential based on Field Study of 2 identical buildings with constant state air-conditioning. High reflectance white coating vs original dark roofing surface  
 ❖ Technical Report : 1CMidGrey-01

InfraCOOL™...Colours that shield from the sun