

## PERFORMANCE DATA – InfraCOOL™ DARK GREY vs Std Dark 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 Dark Grey			Dulux® AcraTex® COOL ROOF Dark 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>	8.5 %			23.6%	
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		
Solar Reflectance Index <i>relevant to wind conditions</i>	Wind condition...			<i>low</i>	<i>medium</i>	<i>high</i>
Surface Temperature <i>constant air temperature : 37C</i> <i>constant Solar flux : 1000 W/m2</i>	-0.16	1.90	3.73	23.34	23.88	24.37
InfraCOOL™ effect <i>potential surface temp. COOLING</i>	103	82	61	91	73	56

**13°C COOLER**  
*low wind conditions*

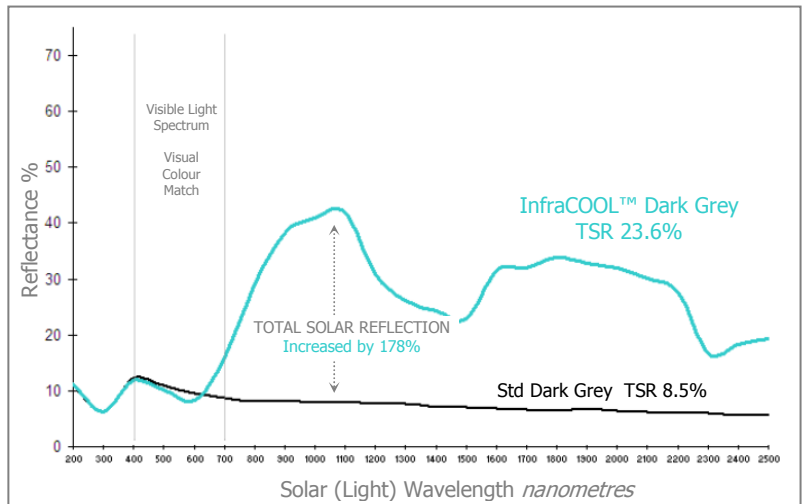
### ASTM E903 : SOLAR ABSORBANCE

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 8.5% to 23.6% (178% increase) with InfraCool™ Technology.



### COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)	
Std (SA)	InfraCOOL™ (SA)
0.915	0.764

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	DARK

❖ 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 : ICDarkGrey-01

InfraCOOL™...Colours that shield from the sun