

## PERFORMANCE DATA – InfraCOOL™ DK TERRACOTTA vs Std Dk Terracotta

### 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**      % TSR    ASTM E903 or C1549  
*Reflectance of the suns energy across the broad solar spectrum including*

- visible region , defining the colour we see
- non visible region, mainly Infra-red (approx 50% of Total Suns rays)

**Thermal Emittance**                      0-1 scale, ASTM C1371  
*The ability of a material to release (ie. emit) captured heat energy*

Std Dark Terracotta			Dulux® AcraTex® COOL ROOF Dk Terracotta		
38.2 %			42.8 %		
0.85			0.90		
<i>Wind condition...</i>			<i>low</i>	<i>medium</i>	<i>high</i>
39.36	40.80	42.07	48.48	48.89	49.26
82	67	53	77	64	51

**Solar Reflectance Index**                      *relevant to wind conditions*

**Surface Temperature**                      *constant air temperature : 37C*  
*constant Solar flux : 1000 W/m2*

**InfraCOOL™ effect**                      *potential surface temp. COOLING*

**5°C COOLER**  
*low wind conditions*

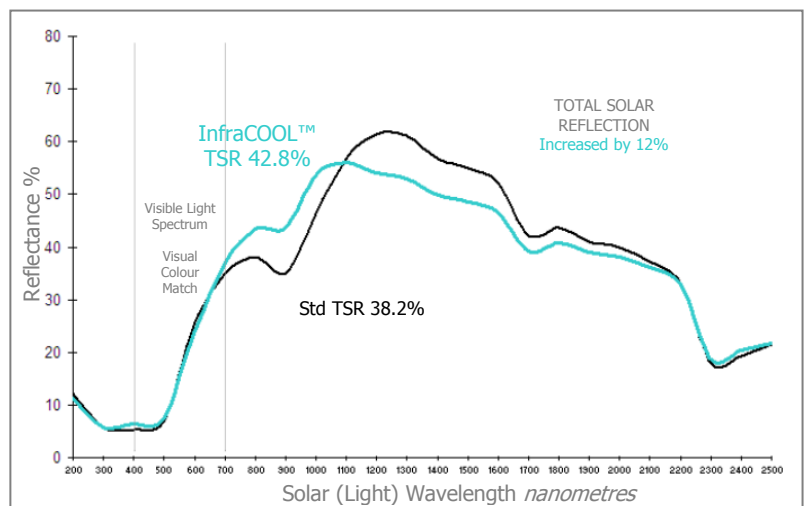
### ASTM E903 : SOLAR ABSORBANCE

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 38.2% to 42.8% (12% increase) with InfraCool™ Technology.



### COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)	
Std (SA)	InfraCOOL™ (SA)
0.618	0.572

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	MEDIUM	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 : ICDarkTerracotta-01

InfraCOOL™...Colours that shield from the sun