

PERFORMANCE DATA – InfraCOOL™ INDIAN RED vs Std Indian Red

KEY FACTS : HEAT REFLECTIVE COATINGS

- Due to their large surface area and exposure, Roof Surfaces capture enormous amounts of the sun's 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 sun's energy which accounts for over 50% of the sun's 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 sun's energy across the broad solar spectrum including

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

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

Std Indian Red			Dulux® AcraTex® COOL ROOF Indian Red			
14.4 %			23.3 %			
0.85			0.90			
<i>Wind condition...</i>	<i>low</i>	<i>medium</i>	<i>high</i>	<i>low</i>	<i>medium</i>	<i>high</i>
7.54	9.48	11.20	22.96	23.50	23.98	
99	79	59	91	74	56	

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*

8°C COOLER
low wind conditions

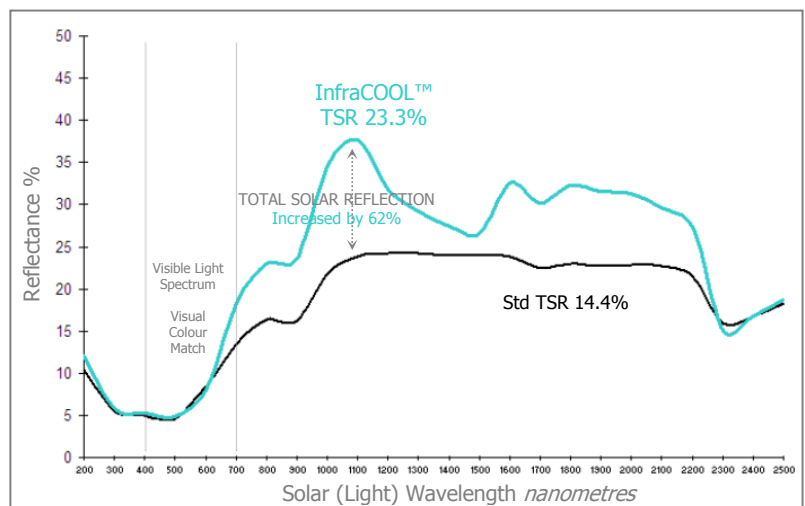
ASTM E903 : SOLAR ABSORBANCE

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 14.4% to 23.3% (62% increase) with InfraCool™ Technology.



COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)	
Std (SA)	InfraCOOL™ (SA)
0.856	0.767

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 : IIndianRed-01

InfraCOOL™...Colours that shield from the sun