

PERFORMANCE DATA – InfraCOOL™ SIENNA vs Std Sienna

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		Dulux® AcraTex® COOL ROOF Sienna					
	Reflectance of the sun's energy across the broad solar spectrum including							
• visible region, defining the colour we see			41.7 %					
• non visible region, mainly Infra-red (approx 50% of Total Sun's rays)			47.6%					
Thermal Emittance	0-1 scale, ASTM C1371		Dulux® AcraTex® COOL ROOF Sienna					
	The ability of a material to release (ie. emit) captured heat energy		0.85		0.90			
Solar Reflectance Index	relevant to wind conditions		6°C COOLER					
			low wind conditions					
Surface Temperature	constant air temperature : 37C							
	constant Solar flux : 1000 W/m2		low	medium	high	low	medium	high
InfraCOOL™ effect	potential surface temp. COOLING		44.14	45.50	46.71	54.88	55.26	55.60
			79	65	52	74	61	50

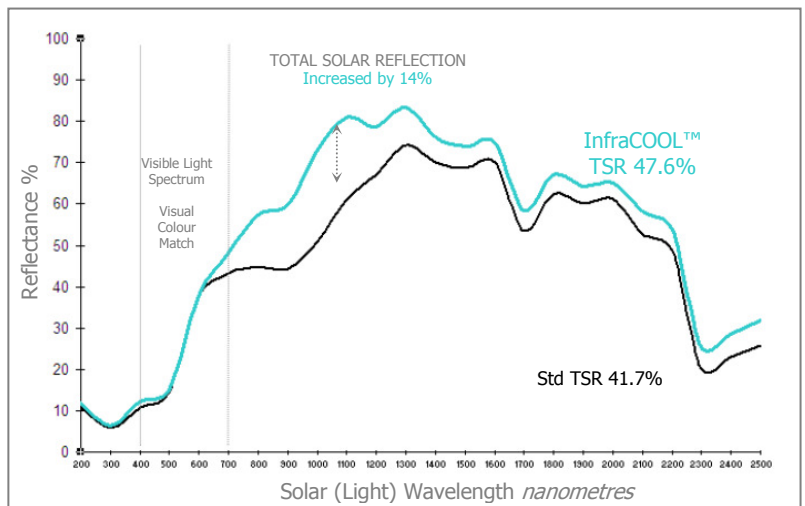
ASTM E903 : SOLAR ABSORBANCE

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 41.7% to 47.6% (14% increase) with InfraCool™ Technology.



COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)		Building Code of Australia (BCA) Classification			NSW Building & Sustainability Index (BASIX) Classification		
Std (SA)	InfraCOOL™ (SA)	Criteria (SA)	STD rating	InfraCOOL™ rating	Criteria (SA)	STD rating	InfraCOOL™ rating
0.583	0.524	Light : <0.55 Dark : >0.55	DARK	LIGHT	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 : ICSienna-01

InfraCOOL™...Colours that shield from the sun