

PERFORMANCE DATA – InfraCOOL™ EBONITE vs Std Ebonite

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 Ebonite			Dulux® AcraTex® COOL ROOF Ebonite		
4.2 %			17.6%		
0.85			0.90		
Wind condition...			low	medium	high
-5.72	-3.58	-1.68	15.64	16.21	16.74
106	84	62	95	76	58

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

12°C COOLER
 low wind conditions

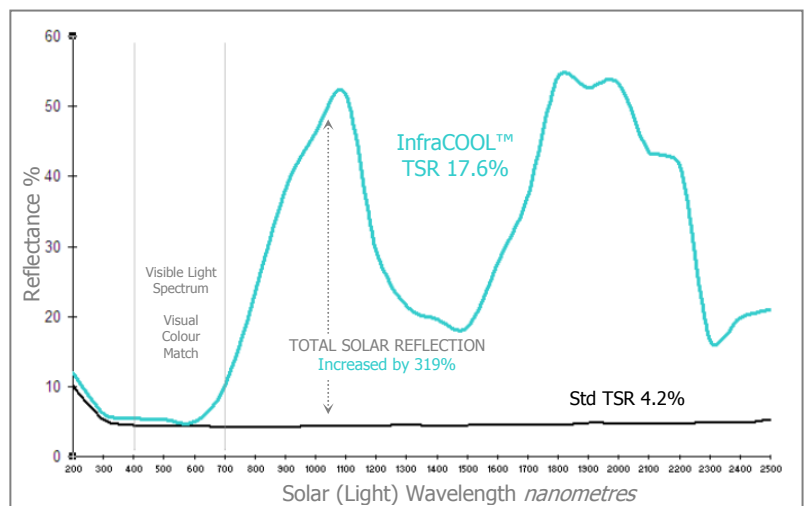
ASTM E903 : SOLAR ABSORBANCE

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 4.2% to 17.6% (319% increase) with InfraCool™ Technology.



COLOUR CLASSIFICATIONS :

Solar Absorbance (SA)	
Std (SA)	InfraCOOL™ (SA)
0.958	0.824

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 : ICEbonite-02

InfraCOOL™...Colours that shield from the sun