

## PERFORMANCE DATA – InfraCOOL® SLATE GREY vs Std Slate Grey

### KEY FACTS : HEAT REFLECTIVE COATINGS

- Due to their large surface area and exposure, Roof Surfaces can capture large amounts of the Sun's energy and thus COOL ROOFS offer potential energy 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 approx. 50% of the suns total light energy.
- Various internationally accepted verification methods demonstrate the potential 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 as defined) demonstrates the estimated surface temperature cooling benefit using Dulux® InfraCOOL® technology against the nominated system.

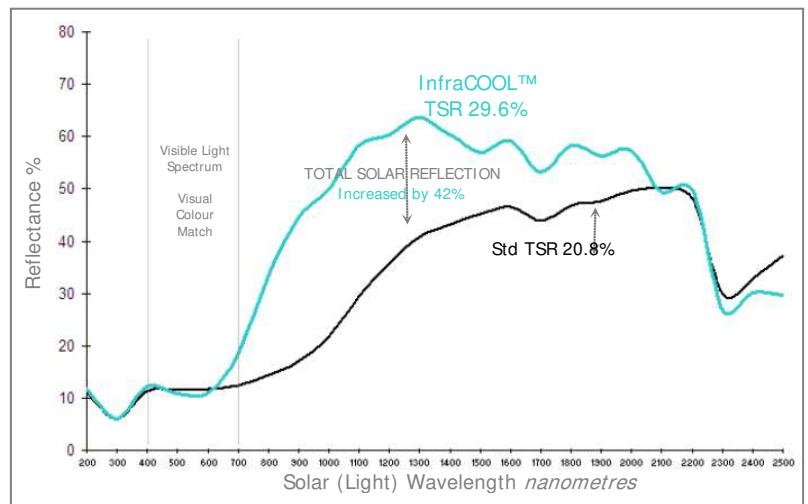
| Total Solar Reflectance (TSR) and Thermal Emittance<br>are measured and then used to estimate resultant Surface Temperature  |  | Std<br>Slate Grey  | Dulux® AcraTex®<br>COOL ROOF Slate Grey |                              |            |                            |             |
|--|--|--|---|------------------------------|------------|----------------------------|-------------|
| <b>Total Solar Reflectance</b>   | ASTM C1549 (% TSR)   | 20.8 %   | 29.6 %                                  |                              |            |                            |             |
| <i>Reflectance of light across the broad solar spectrum inc. visible (colour) and invisible InfraRed radiation</i>   |  |  |   |                              |            |                            |             |
| <b>Thermal Emittance</b>   | ASTM C1371 (0-1 scale)   | 0.85   | 0.90                                    |                              |            |                            |             |
| <i>The ability of a material to release (ie. emit) captured heat energy. Higher number = Faster Heat release</i>   |  |  |   |                              |            |                            |             |
| ASTM E1980 defines a mathematical equation for<br>Calculating Solar Reflective Index and Estimating resultant Surface Temperature  |  | <i>Test Method defines reporting to 3 wind speeds : Low, Medium &amp; High<br/>Medium wind conditions are most typically observed in Australia</i> |   |                              |            |                            |             |
|  |  | <i>Low</i>   | <i>Medium</i>                           | <i>High</i>                  | <i>Low</i> | <i>Medium</i>              | <i>High</i> |
| <b>Calculated Solar Reflectance Index</b>  | <i>relevant to wind conditions</i>   | 15.98  | 17.79                                   | 19.39                        | 31.12      | 31.62                      | 32.07       |
| <b>Estimated Surface Temperature</b>   | <i>Maximum relevant to wind conditions</i>                                     | 95   | 76                                      | 57                           | 86         | 70                         | 55          |
| <b>InfraCOOL™ effect</b>   | <i>Maximum Potential surface temp. COOLING<br/>relevant to wind conditions</i> | <i>Low Wind potential</i>  |   | <i>Medium Wind potential</i> |            | <i>High Wind potential</i> |             |
| <i>Calculations based on constant conditions and 3 wind categories in accordance with ASTM E1980<br/>Air temp ( 37°C ), Solar flux (1000 W/m2).<br/>Wind Speeds Low, Medium, High corresponding to (5, 12, 30 W·m<sup>-2</sup>·K<sup>-1</sup>) respectively.</i> |  | 9 °C   |   | 6 °C                         |            | 2 °C                       |             |

### ASTM E903: SOLAR ABSORPTANCE :

Total Solar Reflectance (TSR) and Spectral Reflectance of 2 visually equal panels is measured 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 20.8% to 29.6% (42% increase) with InfraCool® Technology.



### COLOUR CLASSIFICATIONS :

| Solar Absorptance (SA) |                 |
|------------------------|-----------------|
| Std (SA)               | InfraCOOL® (SA) |
| 0.792                  | 0.704           |

| Building Code of Australia (BCA) Classification |            |                   |
|---|------------|-------------------|
| Criteria (SA)                                   | STD rating | InfraCOOL® rating |
| Very Light : < 0.4                              | DARK       | DARK              |
| Light : 0.4-0.60                                |            |                   |
| Dark : > 0.6                                    |            |                   |

| NSW Building & Sustainability Index (BASIX) Classification |            |                   |
|--|------------|-------------------|
| Criteria (SA)  | STD rating | InfraCOOL® rating |
| Light: < 0.475   | DARK       | DARK              |
| Medium: 0.475-0.70   |            |                   |
| Dark : > 0.70  |            |                   |

InfraCOOL®...Colours that shield from the sun