Concrete Roads

Benefits of High Solar Reflectance

Concrete reflects more light and heat energy when compared with dark surfaces and hence can contribute to a lower urban temperature, enable energy related cost savings, and improve night time visibility and safety.

FACTS AT A GLANCE

1. **Solar Reflectance** - Concrete is twice as reflective as darker coloured asphalt[1].

This can support reduced urban air temperatures and lessen urban heat island effect by reflecting solar radiation back into space (albedo effect).

> Concrete roads are twice as reflective[1].

2. **Lower Energy Costs** - Lighting costs for concrete roads have been shown to be 31% lower than asphalt roads[2].

Concrete pavements due to their light colour and natural visibility; require fewer lighting fixtures and less energy to achieve the same degree of lighting[3].

> 31% lower lighting costs for concrete roads[2].

3. **High Visibility** - Better visibility of pedestrians and vehicles improves the safety of our roads.

The natural reflectivity of concrete can improve the ability of drivers to perceive shapes and figures in low light / night driving conditions.

4. **Sustained benefits** - Concrete pavements have a very long life, often more than forty years, and so continue to deliver ongoing sustainable savings.

Concrete pavements will continue to offer passive energy control for the duration of their life, with the cumulative positive impact comprising a significant contribution to urban sustainability.

Concrete roads through their high solar reflectance contribute positively to our constructed environment.

Visit ccaa.com.au to learn more.

1. "Sustainability opportunities with pavements: are we focusing on the right stuff". L Wathne, International Conference on Sustainable Concrete Pavements Sacramento CA 2010.
2. A comparison of six environmental impacts of Portland Cement Concrete and Asphalt Cement Concrete pavements. Gadja and Van Geem, 2001 Portland Cement Association.
3. Sustainable concrete pavements – A manual of practice, January 2012, Iowa State University, Institute for Transportation.

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