IMMEDIATE RELEASE

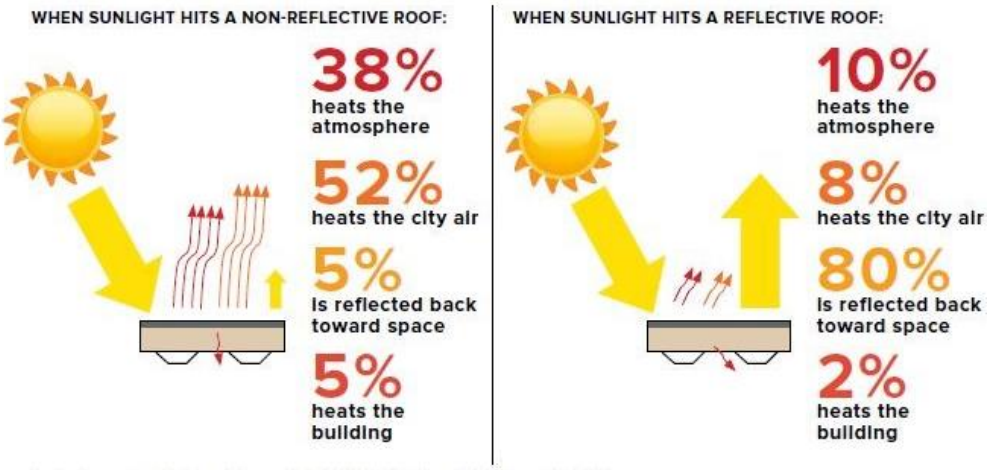
Cool Surfaces application promote energy efficiency tax incentives

The Cool Surfaces project, borne out of a collaborative agreement between the American and South African Departments of Energy, is a non-electric response to South Africa's need for a cost-effective, low maintenance and passive-energy cooling technology for buildings.

Managed by the South African National Energy Development Institute (SANEDI), the Cool Surfaces Project seeks to cool buildings using energy-passive technology, especially in areas where electricity supply is limited or absent.

"Cool Surfaces refers to all materials and technologies used in the construction of the building envelope to improve thermal comfort: surfaces that reflect much of the solar energy and release much of the stored heat energy," explains Denise Lundall, Project Manager - SANEDI Energy Efficiency Cool Surfaces Project.

"This refers to white roofs, light-coloured pavements and specialised cool coatings. The two basic characteristics that determine the 'coolness' of a roof are solar reflectance (SR) and thermal emittance (TE). As can be seen from the diagram below, the results are excellent. Whitening 100 m^2 of roofing cancels the warming effect of 10 tons of CO^2 emissions (or 0.6 tons per year for the life of the roof."



"We began in 2013, and so far seven projects have been completed and have improved thermal comfort for residents and improved buildings' energy efficiency. These are the !Kheis Pilot project in Duineveld, Northern Cape; Emmanuel Primary School and Kgomoco Primary School in Sharpeville, Gauteng; Thusanang Day Care Centre in Hammanskraal, Gauteng; Kimberley Old Magistrates' Courthouse, Northern Cape; !Kheis Municipality Office in Groblershoop, Northern Cape; and !Kheis Cool Surfaces Scale-up Sternham, Northern Cape.

"The !Kheis Scale-up project coated 27 500 m^2 of roofing to improve thermal comfort for occupants and piloted the potential for Cool Surfaces to mitigate the impact of climate change in South Africa. However, this just scratches the cool surface of the potential yet to

be achieved. Pending projects are a Department of Defence building in Limpopo and an informal settlement in City of Tshwane, Gauteng.

“A sizeable amount of housing stock among the low-income households in South Africa is built from various materials that are not necessarily energy efficient. Those range from informal dwellings built out of corrugated iron sheeting, traditional dwellings, township dwellings (matchbox or RDP houses), and regular brick and mortar structures. In all of these, there is no universal application of solar passive design principles.

“Most suffer from poor design, leading to uncomfortable and sometimes extreme indoor temperatures night and day, during winter and summer. For most of the dwellings, there is still no access to electricity and, where it is available, electric heating/cooling is not an economic option.

“Therefore, there has been a focus on low-income housing but not to the exclusion of other markets. Cool coatings/membranes are effective on most buildings – from storage warehouses to corporate office buildings, with sophisticated HVAC systems.

Benefits

- Cooler surface temperatures help the roof and the equipment on it last much longer.
- Cool roofs allow less heat into the building, making homes, warehouses and other buildings without air-conditioners (AC), much cooler.
- In cities, cooling effects vary from city to city, but studies indicate a consistent pattern of cooling potential from between 2-4 ^{0}C.
- Globally cancels 500 medium- sized coal power plants’ worth of greenhouse gas emissions – more than compact fluorescent lamp (CFL), deployment. It is an excellent offset measure.
- Cool surfaces can cut AC energy use by up to 20% on the top floor of air-conditioned buildings, often avoiding cooling loads at peak times.
- Cooler intake air means the AC works less, and energy efficiency contributes to downsizing AC units.

“Qualifying industries that use Cool Surface technology can apply for the 12 L Tax Incentive for energy efficiency. For more information, go to www.sanedi.org.za/12L.html,” concludes Lundall.

Ends 624 words

About SANEDI

The South African government established (SANEDI) to direct, monitor and conduct applied energy R&D, demonstration and deployment, as well as to undertake specific measures to promote the uptake of green energy and energy efficiency in South Africa. Its mission is to use applied and energy research and resource efficiency to develop innovative, integrated solutions that will catalyse growth and prosperity to meet its vision of sustainable living for growth and prosperity in Africa.