IMPLEMENTATION OF THE BECOOL PRODUCT ON BUILDING ROOF IN EQUATORIAL CLIMATES

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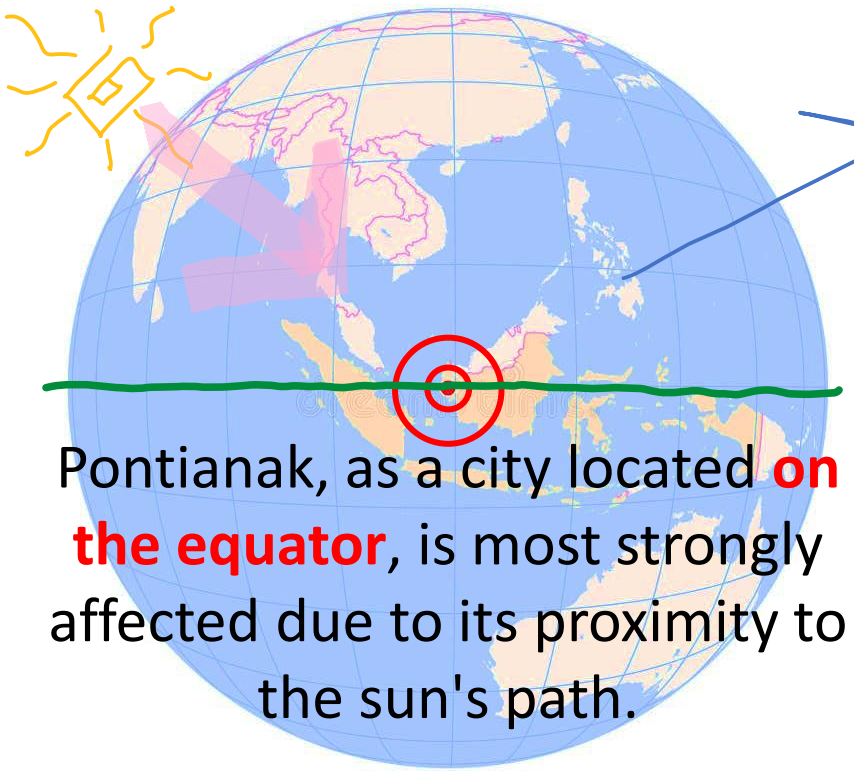
Introduction



Pontianak, as a city located **on the equator**, is most strongly affected due to its proximity to the sun's path.

Thermal comfort

Mean Radiant Temperature

Air Temperature

Passive cooling

Cool roofs technology

βeCool
CAT REFLEKTIF SURYA

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Method

Participatory

Implementation of the βeCool CAT REFLEKTIF SURYA

Experimental analysis

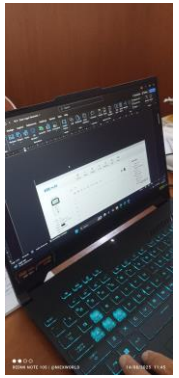

2021 Mu'tashim Billah




2025 Islamiyah





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Result and Discussion

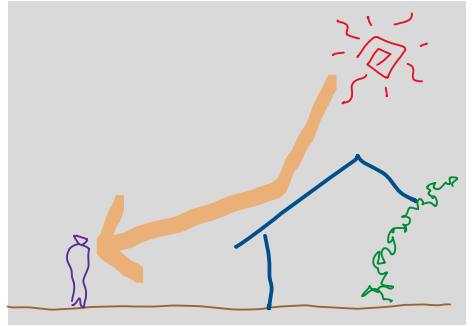
Average temperature	Mu'tashim Billah	Islamiyah
Outdoor Air Temperature	31.6	37.0
Outside Surface Temperature	33.5	41.5
InSide Surface Temperature	30.5	35.5

- This technology can reduction in indoor temperatures, ranging from 3.5°C to 6°C.
- This temperature reduction is influenced by several factors (type of roof material, coating material & fluctuative climate change).

Result and Discussion

- The BeCool application process is very simple (by brushing & without specialized skills).
- Rust, being the decomposition of iron, naturally makes it difficult for the coating to maintain coverage over the roofing surface material.

Result and Discussion



- The light reflection produced by BeCool coating on the certain angles facing the surrounding environment can result in glare, and has the potential to cause visual discomfort.

Conclusion

- BeCool successfully achieves its primary goal in equatorial regions as a cool roof technology to reduce indoor temperatures by up to 6°C (in the certain condition).
- The BeCool application process is very simple (by brushing & without specialized skills).
- The performance and durability of BeCool are influenced by corrosion occurring in iron-based roofing materials.
- The cool roof technologies require additional measures such as vegetation in the surrounding area or other curtains to provide a buffer for glare effect from the reflecting light.

Reference

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