

Please Answer the following questions, and I can then complete the full application for the Cool Roadways Partnership. Thank you!

Describe how the proposed solution addresses the following (250 word maximum for each response):

1. What is the expected timeline to develop and commercialize the solution if it is not currently available? **ThermaCote® is already in the market place and ready to go.**

2. What surface and air temperature reductions resulting from the roadway solution, daytime and nighttime, have you identified?

During the daytime what we have seen are temperatures on roadways and other hard scapes which remain closer to the ambient temperature instead of becoming super-heated by their exposure to the sun. Once the sun goes down there is no release of excess heat stored in the substrate and the surrounding air temps decrease like a wooded or shaded area and the temperatures reduce; as the ambient temperature cools down so do the substrates with ThermaCote® on them.

3. How simply can the solution be integrated into existing roadway management and maintenance operations?

ThermaCote® is installed similarly to paint with spraying being the best alternative as ThermaCote® has a low weight at around 5 lbs. per gallon or 0.6 kilos per liter wet and thick as it is 80 %+ solids. ThermaCote® does need a clean dry surface for proper application and that is usually produced by power washing the substrate to be coated as a part of the prep work. We have done road applications where we used no water resources to wash the surface but instead used brooms and forced air to clean with as a show of support for a community that suffers through droughts and tight water resources on a regular basis. L A.

4. What is the global warming potential associated with manufacturing the roadway solution in production and use phase?

Since there is no harmful 'off-gassing' when ThermaCote® dries and cures on a road surface it is much more friendly to the environment than most paints and coatings which can lose as much as 55% or more of the material into the air from off-gassing while drying. It is common to see the

use of several different products on a roadway which all off gas and lower the applied or wet film thickness to the dry film thickness or what is left after drying and curing. A 10 - 12 mil application of ThermaCote® will leave a dry film thickness of 10 -11 mils.

We allow no hazardous materials into our facility and produce clean energy saving products in a facility operating one shift per day Monday - Friday. Transportation from Atlanta would be worse but the lightweight of the product allows for full truckloads or shipping containers that are literally full from the front to back and to the top!

5. Add any additional information for the proposed solution. Attach photos, videos or links to materials demonstrating application, installed condition, and relevant characteristics of the solution such as product material safety data sheets

ThermaCote® has been traction tested and is shown to be "NOT SLIPPERY" when wet. Tested for US Roads; International Roads; International Air Port Runways; Australia's strict Anti-Slip for swimming pool decks; McDonald's 'slippery when wet' ramp test.

Sotter 303 test / LA approval

Cost and Installation (50 word maximum for each response):

1. Can the solution be purchased and installed by in-house department staff (i.e. does not require a licensed installer): Yes/No **Yes! We do like to 'certify' installers since this 'ain't paint' but it costs nothing and can usually be accomplished in a phone call and a YOUTUBE video with personnel familiar with paint and coatings applications. We like training in house personnel as the municipalities can see larger ROI from the purchase by installing it themselves.**

- If so, does it require special equipment to install it: Yes/No **Yes!**

If yes, what equipment is needed? **Installers will need a spray pump capable of picking up 2 gallons per minute at the pump end. We recommend a GRACO 7900 gas powered sprayer which can pick up 2 gallons per minute and deliver production amounts of 10,000 - 20,000 sf per day of coating installed substrate.**

- If so, what is the cost per square yard for materials: \$/SY

The average cost of ThermaCote® is \$10 - \$20 per square yard depending on the thickness of the application.

2. What is the cost per square yard for material if installed by contractor: \$/SY 3. What is the average installation rate: SY/Day?

The average installed rate of ThermaCote® is \$18 per square yard and a 3 person crew can average 3,000 + square yards of application per day.

Use Cases (250 word maximum for each response)

1. What are the appropriate use cases for the solution (e.g., pavement type, age, condition, climate)? Please provide appropriate case studies, testing, and/or supporting research.

All driving substrates from asphalt to concrete can be coated using ThermaCote® if they are clean and dry for the application.

Attaching the Los Angeles Roads and Streets approval with testing.

2. What are the safety, slipperiness, and friction characteristics (e.g. typical Surface Coefficient of Friction)?

Attaching a test report from 'Sotter' regarding traction testing for the '303 International roadway standard'

3. What is the curing time including how quickly the road can open to traffic after installation given average temperatures, partly sunny, and non-humid conditions? How does this compare to existing relevant products?

In Abu Dhabi we were able to resume operating on asphalt at 20 minutes after the application of ThermaCote® at approximately 10 US mils / 0.25mm of applied thickness.

4. Is it sensitive to placement in cool weather, i.e. 50° F and falling? Yes/No

YES! Above 50F and not falling and warmer direct sun days are recommended for better adhesion and drying.

5. Is it sensitive to placement in high humidity or damp conditions? Yes/No

ThermaCote® is a waterborne acrylic and cannot be installed on wet surfaces or while it raining. A hot day with high humidity should not be much of a concern and this is looking back at the Abu Dhabi install which was about 120F and 80-90% humidity.

6. How long does this treatment typically last under average traffic conditions in years? How does this compare to similar products?

We are recommending a thickness of 10 US mils / 0.25mm which will be highly cost effective compared to other solutions even if it required a recoat in two - three years would be less expensive than options which are currently deployed.

7. Can it be re-applied over itself for renewal? Yes/No

Yes!

8. Is it recommended for heavy traffic conditions like urban arterials? Yes/No

Yes although we would like to evaluate Thermacote® in a heavy traffic situation such as a local roadway before placing it on an expressway. We are currently attempting to work with our state DOT to secure some review locations for applications of ThermaCote®.

9. Are standard MUTCD compliant white and yellow markings clearly visible? Yes/No

YES! and ThermaCote® is available in colors making it ideal for special parking sections of large parking lots of sports and concert venues to coincide with 'red parking' blue parking' 'green parking' etc....