Ekko was developed as an alternative to traditional concrete overlays. Ekko has been successfully used in many projects in the United States and other countries. The main advantages of Ekko include: 

- Lower cost compared to traditional concrete overlays.
- Reduced time for drying and curing.
- Improved durability and performance.
- Enhanced ease of installation and maintenance.

Ekko is designed to be used as a topping solution for various types of concrete surfaces, including parking lots, sidewalks, and driveways. It is a self-leveling material that can be applied in a single coat, eliminating the need for additional layers or finishing. This makes the installation process more efficient and cost-effective. Ekko also provides a superior finish, offering a smooth and even surface that is resistant to cracking and chipping.

Ekko's application process is straightforward. First, the concrete substrate is prepared by removing any debris, dust, or contaminants. The surface is then cleaned and primed to ensure proper adhesion. Ekko is then applied using a conventional or high-pressure spray method, followed by the appropriate curing time. Depending on the specific application and environmental conditions, the curing time may vary. Once the material has cured, it is ready for use without any additional finishing steps.

Ekko's performance has been consistently positive in various project applications. It has shown excellent results in terms of durability, weather resistance, and cost-effectiveness. The material has been widely used in different climatic conditions and has demonstrated its capability to withstand heavy traffic and extreme weather elements. Ekko's low maintenance requirements and long-term performance make it an attractive option for both residential and commercial settings.
ThermaCote® is a waterborne acrylic and cannot be installed on wet surfaces or while it is raining. No, Air humidity and wind conditions may impact drying time. Although road humidity is typically high, wind speeds and high temperatures can reduce the drying rate of our cool roadway solutions. PTI recommends maintaining a temperature of at least 60°F(15°C) for the ThermaCote® solution during application. The product is not recommended during temperatures below freezing.

The application on concrete roads could be less relevant as those surfaces already have a reflective cool layer due to the concrete as well as the reflection from the water. The application on asphalt surfaces can be integrated into existing pavement markings as long as the pavement marking is not filled with water, then spreading the solution may be an option, this has not been done yet.

The product used is currently available at large scale, it derives from an already successful business model and standards that have been developed over time. Environmental and California Tan #375-T to match the surface of the California Desert. With the help of Lawrence Berkeley Labs, We developed ArmorTop® Stealth Gray and California Tan feel and act like a typical asphalt seal coat product and can be applied by spray, broom or squeegee. We always recommend a two coat application. No, Air humidity and wind conditions may impact the application. When not in direct sun and at night. Unlike black or darker surfaces that absorb and radiate the sun’s heat, this cool reflection is designed to lower the temperature on the surface. For our product to work as designed it is most effective on flat surfaces, with a smooth, hard base that can hold the coating.

During the use phase, the installation of the product does not require the use of any specialized or side protection equipment to ensure a homogeneous & clean application without the need for any roller or squeegee. The product is available in production and can be integrated into existing pavement markings. The beauty of slate is that it always lays flat and does not shed from the surface like other products. Being a mineral slurry, it is 80+% solids. It is still something that must be further assessed.

The PlusTi™ technology incorporates and updates the existing technology in pavement markings of asphalt roadways. It is one of the questionings regarding the solution and for which we need a sustainable infrastructure standards. Attached are a number of case studies and research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The energetic impact of the mineral slurry manufacturing process (extraction and production of TiO2) is still something that must be further assessed. Moreover, PTI has developed a process which achieves each of the stated deliverables with a positive effect. The energetic impact of the PlusTi™ technology is still something that must be further assessed.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

The PlusTi™ technology incorporates and updates the existing technology in pavement markings of asphalt roadways. It is one of the questionings regarding the solution and for which we need a sustainable infrastructure standards. Attached are a number of case studies and research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The energetic impact of the mineral slurry manufacturing process (extraction and production of TiO2) is still something that must be further assessed. Moreover, PTI has developed a process which achieves each of the stated deliverables with a positive effect. The energetic impact of the PlusTi™ technology is still something that must be further assessed.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

Who has not identified any asphalt formulations yet that would prevent the use of our PlusTi™ technology. Furthermore, PTI has continued the development of solutions for both asphalt and concrete surfaces. The PlusTi™ technology can provide appropriate case studies, testing, and/or research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

The PlusTi™ technology incorporates and updates the existing technology in pavement markings of asphalt roadways. It is one of the questionings regarding the solution and for which we need a sustainable infrastructure standards. Attached are a number of case studies and research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The energetic impact of the mineral slurry manufacturing process (extraction and production of TiO2) is still something that must be further assessed. Moreover, PTI has developed a process which achieves each of the stated deliverables with a positive effect. The energetic impact of the PlusTi™ technology is still something that must be further assessed.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

The PlusTi™ technology incorporates and updates the existing technology in pavement markings of asphalt roadways. It is one of the questionings regarding the solution and for which we need a sustainable infrastructure standards. Attached are a number of case studies and research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The energetic impact of the mineral slurry manufacturing process (extraction and production of TiO2) is still something that must be further assessed. Moreover, PTI has developed a process which achieves each of the stated deliverables with a positive effect. The energetic impact of the PlusTi™ technology is still something that must be further assessed.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.

The PlusTi™ technology incorporates and updates the existing technology in pavement markings of asphalt roadways. It is one of the questionings regarding the solution and for which we need a sustainable infrastructure standards. Attached are a number of case studies and research for the roadway microenvironment, to directly reduce NOx emissions by 30-50% or greater at test sites.

The energetic impact of the mineral slurry manufacturing process (extraction and production of TiO2) is still something that must be further assessed. Moreover, PTI has developed a process which achieves each of the stated deliverables with a positive effect. The energetic impact of the PlusTi™ technology is still something that must be further assessed.

The PlusTi™ technology provides appropriate case studies, testing, and/or research for the roadway microenvironment. As asphalt formulations and concrete surface treatments, all off gas and lower the road's surface temperature down.
Melissa Sewell

Shepherd Color Basics

GAF

Lee Martucci

Lhoist Mineral Slurry Technology

Western Colloid Inc.

Airports.com

Garcia Llana

Endurablend
durablend.com

R. M. Smiley

Endurablend is a polymer modified cement thin overlay. Endurablend is available now and has been installed for over 10 years as an alternative to asphalt for the repair and rehabilitation of existing airport pavements.

Western Colloid Inc. developed Stealth Gray #375-G in the mid 1990’s. Stealth Gray was inspired by Lacrosse Bomber, a long-range bomber aircraft manufactured by the manufacturer and creator of the Stealth Bomber. In order to avoid satellite detection, the manufacturer of the Stealth Bomber painted the airplane in a flat gray color as the color of the bomber so the bomber would essentially blend into the surrounding environment.

Lhoist Mineral Slurry Technology is a team of engineers and scientists that have focused on the development of innovative and sustainable solutions for the construction industry. They have worked with leading companies in the industry such as GAF and Lhoist to develop solutions for reducing the environmental impact of construction projects. Their technology allows for the efficient removal and reuse of materials, which reduces the amount of waste sent to landfills and helps to conserve natural resources. Additionally, their technology helps to reduce air pollution and greenhouse gas emissions, which are major contributors to climate change.

Western Colloid Inc. has been providing solutions for the construction industry for over 60 years. Their solutions help to increase the sustainability and performance of construction projects, while also reducing the environmental impact. Their technology is used in a variety of projects, from road construction to airport revitalization, and has been recognized for its innovative approach to sustainability and performance.

Endurablend is a polymer modified cement thin overlay that is applied to existing asphalt or concrete to increase its strength and durability. It is available now and has been installed for over 10 years as an alternative to asphalt for the repair and rehabilitation of existing airport pavements.

Endurablend is extremely durable, cement based and can hide dirt and tire pick-up and reduce glare. We believe this is the optimal way to help cool roads by reducing the heat that is absorbed in the visible for dark colors and reflecting the IR for less solar absorption.

Endurablend has been installed in over 200 airport projects since its introduction and continues to be a popular choice for road managers across the globe due to its cost-effective solution and low maintenance requirements.

Endurablend achieves a SRI reading of between 35 and 40 which is a very attractive number for airport operators who want to mitigate UHI. 10, PlusTiTM targets an SRI value of 40 and consistently delivers results in the same range.

Endurablend is a polymer modified cement thin overlay that is applied to existing Substrate.

Asphalt is the most recycled material in the world. Recycled asphalt can also be used as a binder in the production of endurablend. This approach has been successfully adopted by many agencies such as Iowa DOT as a regular part of their roadway management operations.

Endurablend is extremely durable, cement based and can hide dirt and tire pick-up and reduce glare. We believe this is the optimal way to help cool roads by reducing the heat that is absorbed in the visible for dark colors and reflecting the IR for less solar absorption.

Endurablend achieves a SRI reading of between 35 and 40 which is a very attractive number for airport operators who want to mitigate UHI. 10, PlusTiTM targets an SRI value of 40 and consistently delivers results in the same range.

Endurablend is a polymer modified cement thin overlay that is applied to existing Substrate.

Asphalt is the most recycled material in the world. Recycled asphalt can also be used as a binder in the production of endurablend. This approach has been successfully adopted by many agencies such as Iowa DOT as a regular part of their roadway management operations.

Endurablend is extremely durable, cement based and can hide dirt and tire pick-up and reduce glare. We believe this is the optimal way to help cool roads by reducing the heat that is absorbed in the visible for dark colors and reflecting the IR for less solar absorption.

Endurablend achieves a SRI reading of between 35 and 40 which is a very attractive number for airport operators who want to mitigate UHI. 10, PlusTiTM targets an SRI value of 40 and consistently delivers results in the same range.

Endurablend is a polymer modified cement thin overlay that is applied to existing Substrate.

Asphalt is the most recycled material in the world. Recycled asphalt can also be used as a binder in the production of endurablend. This approach has been successfully adopted by many agencies such as Iowa DOT as a regular part of their roadway management operations.

Endurablend is extremely durable, cement based and can hide dirt and tire pick-up and reduce glare. We believe this is the optimal way to help cool roads by reducing the heat that is absorbed in the visible for dark colors and reflecting the IR for less solar absorption.

Endurablend achieves a SRI reading of between 35 and 40 which is a very attractive number for airport operators who want to mitigate UHI. 10, PlusTiTM targets an SRI value of 40 and consistently delivers results in the same range.

Endurablend is a polymer modified cement thin overlay that is applied to existing Substrate.

Asphalt is the most recycled material in the world. Recycled asphalt can also be used as a binder in the production of endurablend. This approach has been successfully adopted by many agencies such as Iowa DOT as a regular part of their roadway management operations.

Endurablend is extremely durable, cement based and can hide dirt and tire pick-up and reduce glare. We believe this is the optimal way to help cool roads by reducing the heat that is absorbed in the visible for dark colors and reflecting the IR for less solar absorption.

Endurablend achieves a SRI reading of between 35 and 40 which is a very attractive number for airport operators who want to mitigate UHI. 10, PlusTiTM targets an SRI value of 40 and consistently delivers results in the same range.

Endurablend is a polymer modified cement thin overlay that is applied to existing Substrate.
Yes, it requires a mixer and a hand squeegee or a box squeegee. The cost is $4.50 per SY.

**Pavement Surface Coatings**

- **Pavement Technology Inc**
- **Lhoist North America**
- **Shepherd Color**
- **ThermaCote**
- **GuardTop**
- **Basics**
- **GAF**

**Cost and Training**

Yes, we recommend an ArmorTop application. Softness, crumbling, cracking or alligatoring (asphalt is aged and beyond its life cycle, i.e. evidence of raveling, surface damage, etc.) indicate a need for a new surface. If the site is poor, we may not recommend a ThermaCote application as the surface may not support the application.

- **Preparation**: The surface must be prepped prior to application by cleaning free of all loose debris, oil spots and other compromised areas that would inhibit proper adhesion to the surface. If the surface is in poor condition, it must be repaired or replaced.

- **Mixing**: Yes, mixing must be done properly and accurately.混合必须正确和准确。The material must be mixed at the correct proportion to ensure proper adhesion and coverage. This can be done in-house or by a licensed installer.

- **Application**: The application must be done properly and accurately. The surface must be properly prepared and the correct application technique must be used. A network of qualified installers is available to ensure quality.

- **Training**: Yes. 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 at the pump end. We recommend a GRACO 7900 gas powered sprayer which can pick up 2 gallons per minute at the pump end.

- **Quality Assurance**: Agencies that currently qualify.

- **Funding**: Existing funding from the FHWA Congestion Mitigation & Air Quality Improvement Program (CMAQ) can be accessed by municipalities. Working for 6 hours: ~= 130,000 SY in a day. Working for 8 hours: ~= 173,000 SY in a day.

- **Volume**: The average production rate for PlusTiTM depends on the surface type (asphalt vs. concrete) and the functional classification of the project. The average installed rate of ThermaCote® is $18 per square yard.

- **Cost**: The installed cost is dependent on geography and project size, but typically runs in the range of $1.00 - $1.40 per square yard. The average cost of ThermaCote® is $10 - $20 per square yard depending on the thickness of the application.

- **ROI**: Depending on the location, the ROI can be as high as 30% for ThermaCote®. The ROI can be even higher for larger projects like urban intersections or bridges. We like training in house personnel as the average installation rate is about 6000 SY/Day. Agencies that currently qualify.
What are the appropriate use cases for the solution (e.g., typical Surface Coefficient of Friction)?

- Coolseal: Is it sensitive to placement in cool weather, i.e. 50º F and falling? Is it sensitive to placement in high humidity or damp conditions? How long does this treatment typically last under average traffic?

- PTI: Is it sensitive to placement in cool weather, i.e. 50º F and falling? Is it sensitive to placement in high humidity or damp conditions? How long does this treatment typically last under average traffic?

- All ArmorTop products are designed to be reapplied over itself for maintenance. Recount: Color pigment doesn't negatively affect recoatability. Color pigment can be used in high traffic systems. Contrast with MUTCD depends on shade chosen.

- Yes. One of the distinct advantages of using this technology, it does not require any special maintenance or care. The material on the surface to wear away. The performance resistance specifications for larger arterials.

- DuraShield: Wear and NOx reduction the specification (attached) calls for minimum 7 years before requiring additional treatment. The material is a penetrant and becomes an integral part of the roadway with no elevation of a pavement ~4 inches may take some careful detailing.

- Superseal: Recount: Painted a black border around the white and yellow lines to improve the retro-reflectivity of the pavement markings. Furthermore, the performance resistance specifications for larger arterials.

- Recount: No, it is not sensitive to placement in cool weather, i.e. 50º F and falling. It is sensitive to placement in high humidity or damp conditions. How long does this treatment typically last under average traffic?

- Yes. PTI has multiple products capable of being applied in all traffic classification and traffic levels are taken into consideration pre-