



Pavement Coatings

Question: "A project that has situation where melt water is flash-freezing on the surface of a concrete parking lot. Grade of the parking lot is good. They want to explore if coating the surface with a black product could take advantage of thermal heat gain."

First off I am not sure a darker color will remedy your problem. If water is "flash freezing" I am thinking this is due to warming up and melting in the day then freezing at night. The darker color will not help at night when this is freezing. However if this is occurring in a situation where you think the darker color will allow the water to evaporate in the day it may be helpful.

I think emulsion will not be durable enough and will generally cause you headaches in the form of initial stickiness, too thin of coverage, and would likely wear off in traffic areas leading to repeated applications and an unsightly parking lot. Seal coating would be a step up. I have seen this application and you will likely have similar wearing off of the product but it would be more durable. Loss of traction may be a concern as well. A slurry seal is a thicker sealcoat with some sand/small aggregate added. This may prove to be more durable and add some traction that a standard seal coat would not have. Ultimately if you go with any of these options you will create a maintenance item. I would liken it to painting a brick building. You may have to wash brick from time to time but once you paint it you will always be painting it in the future. The better job you do prepping the surface and selecting a quality product/contractor the better it will perform.

A thin overlay would be more durable but obviously would have more cost. Also you would have to make sure you could maintain your drainage. While this would provide a much longer lasting solution than the seal coats again over the years you will have to maintain this potentially with a seal coat. Preparation of the surface would again be key.

One other product that may be of use is the topping used on sports courts. I do not have very much experience in these but I think they are applied as an epoxy and may bond better with the concrete than a seal coat sort of being between a sealcoat and an overlay. Cost if this is a large lot and color selection would be issues.

I agree with assessment above regarding cosmetic solutions such as spraying and emulsion, seal coating, slurry sealing.

These would provide some relief but would most likely not solve the problem with the quick (Flash) freezing of the parking lot materials. The benefit to placing a darker surface would be it will warm quicker in the early day sun and hold heat a bit longer in the early evening hours.

A thin overlay, if chosen, would solve two issues. It will give the darker surface discussed and to provide a seal on the concrete lot in an attempt to stop or delay any additional spalling caused from water infiltration into the concrete surface, which is really the problem. The aggregates are absorbing moisture and when they freeze the materials pop causing the spalling to occur.

Earlier it was discussed of a sport court product. This would provide a similar benefit as would an overlay. The epoxy coatings would seal the surface and would give the darker color as desired.

There are many options available for coating pavement. There are many colors available, and I believe they can be specially colored.

This product is used on streets and highways with great success and has shown to have really good durability. If a coating is used the parking lot striping can also be incorporated into the pattern.

One additional benefit of this coating is it can be used for LEED points as some of these coatings provide environmental benefits.

We have a member contact who is an expert for this type of pavement coating and had actually done a demo section in the street adjacent to our building about 6 months ago. The sections adjacent to our building are holding up very well, and we will see how they perform after the winter season.