



Roadtec Technical Information Update

Asphalt Pavement Joint Heater

Test on US Highway 70, West of
Jackson, Tennessee

TN DOT and Ford Construction Co.

Joint Heater



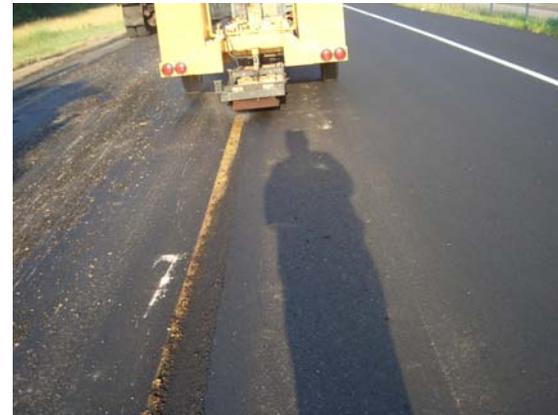
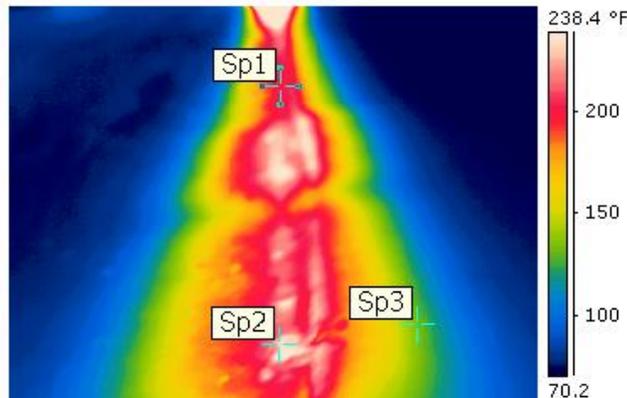
- Propane fired joint heater by Heat Design Equipment is being towed along the paving joint.
- Continuous paving is desirable.
 - Use of an offset Roadtec Shuttle Buggy makes this possible as trucks often could disrupt the heater bank.
 - Non-stop paving leads to even heating and consistent results.

DOT Requirements



- The Tennessee DOT engineer wanted 200°F / 93 °C at the joint when the breakdown roller was employed.
- They were able to get precisely 200°F / 93 °C or very close note the blue color at the actual joint itself

Gentle Heat



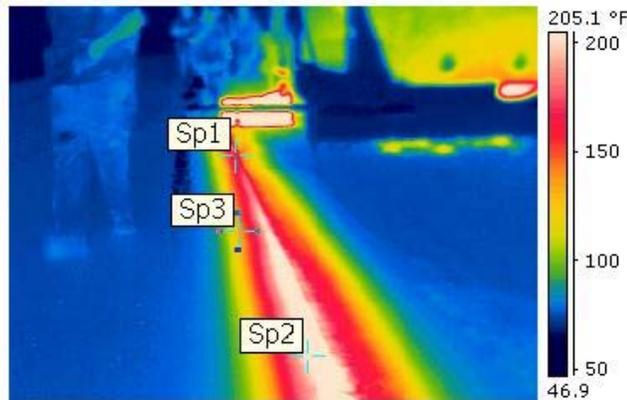
- The infrared heater employs multiple layers of a patented ceramic and steel fabric to generate true infrared heat which reheats asphalt mixes to 2.5 inches / 5 cm in depth without damage or change to the mix.
- This gentle heat does not raise the existing mat or previous overlay temperature more than 300°F / 150°C in most cases thus does not generate any blue smoke or gray color on the asphalt surface.
- Maximum heat here, as measured by FLIR Infrared camera, was only 238.4 °F / 144.6 °C .

Infrared with no open flame



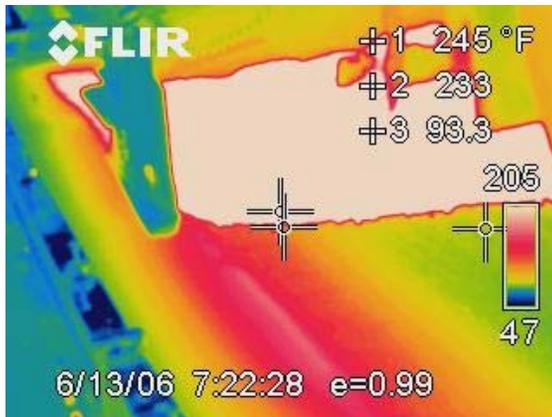
The only “smoke” is steam being driven off the surface, no evidence of blue smoke or light ends of the bitumen were noted.

Continuous Paving



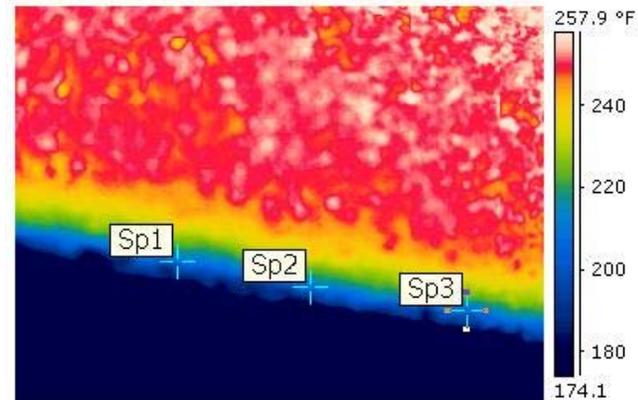
- The use of the Roadtec Shuttle Buggy allows room for the joint heater to operate.
- The continuous paving with the SB also allows for the consistent near 200 °F / 93 °C temperature under the breakdown roller upon the all important first compaction of the joint.

Joint Construction



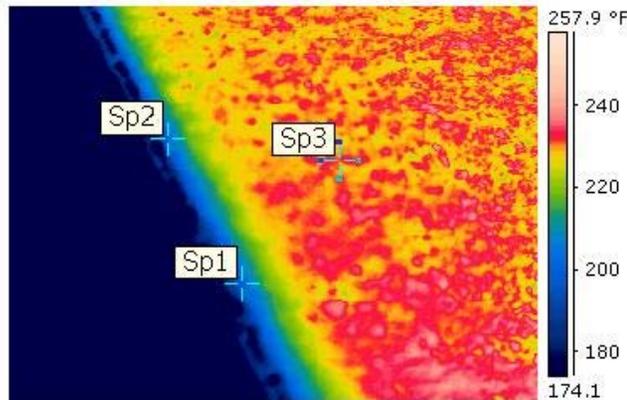
- The joint heat was just at 200 °F / 93 °C in these photos taken at the extension box of the Carlson Screed.
- The goal is to weld the joint without scorching the mix.

The joint itself is important



- These photos were taken at the point of breakdown rolling on the joint, water from the roller is seen on the joint itself.
- The 200 °F / 93 °C temperature does not boil the water but does provide a consistent continuous weld to the fresh and previously laid mats.

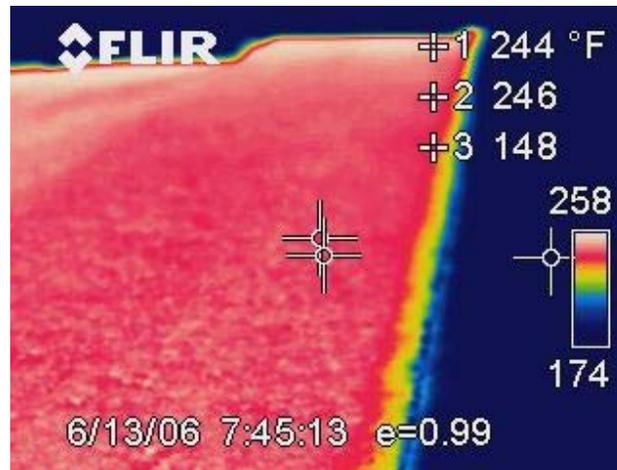
Consistent Compaction = Consistent Quality



- The joint between the overlays remains one of the most persistent problems encountered in the paving industry.
- A consistent temperature will lead to consistency in the welding of the joints.
- This joint heater when used with an MTV to provide no-stop paving, can lead to faultless joints.

Summary

- The joint heater used in conjunction with a material transfer vehicle may provide the consistent non damaging heat needed to eliminate the persistent premature failures of pavements at the cold joint.
- Heat Design Equipment of Kitchener, Ontario, Canada seems to have the solution to this most persistent asphalt paving problem.



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