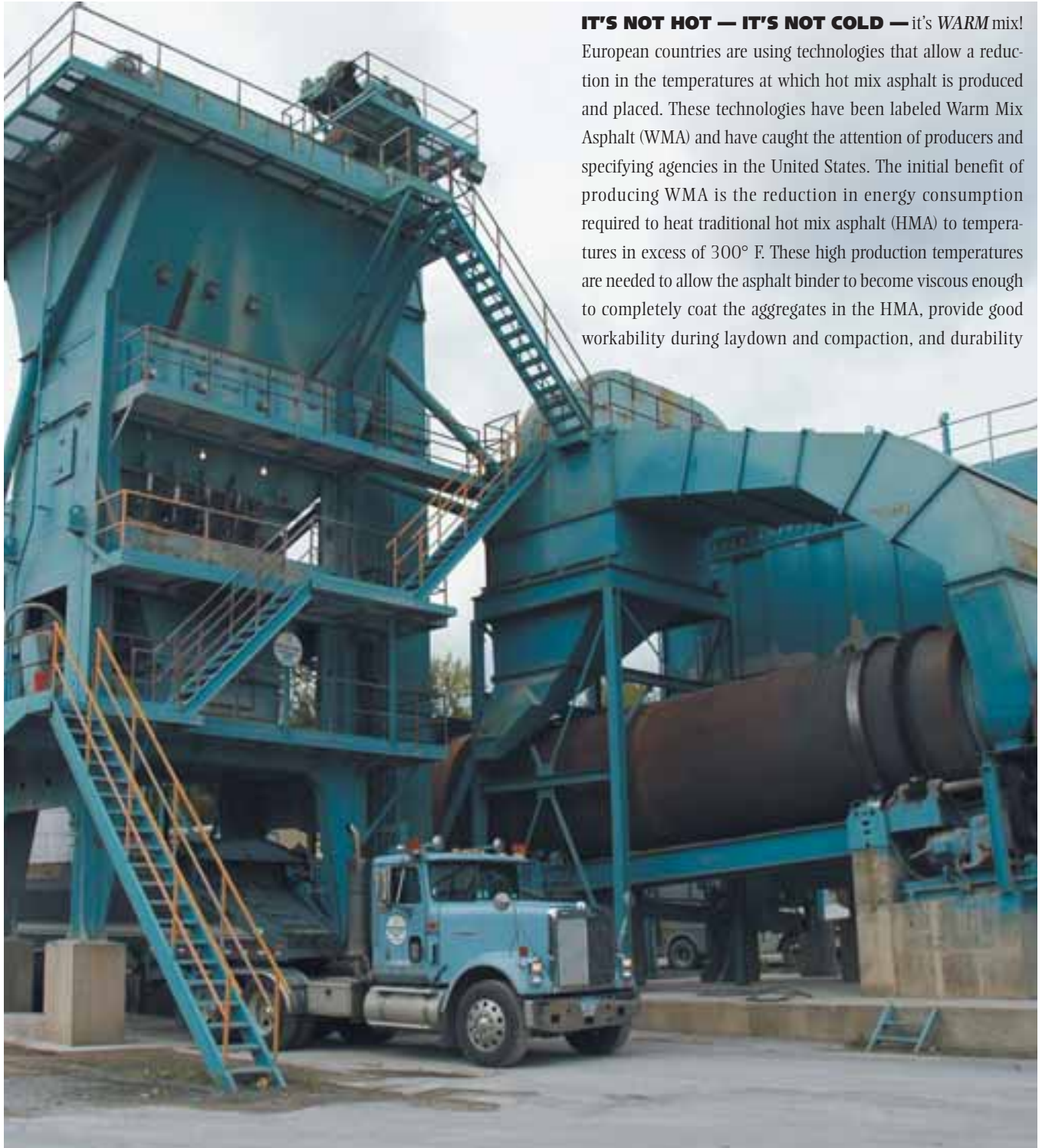


AROUND THE HOT MIX INDUSTRY

By Chris Suttmeier

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Warm Mix Asphalt: A Cooler Alternative



IT'S NOT HOT — IT'S NOT COLD — it's *WARM* mix! European countries are using technologies that allow a reduction in the temperatures at which hot mix asphalt is produced and placed. These technologies have been labeled Warm Mix Asphalt (WMA) and have caught the attention of producers and specifying agencies in the United States. The initial benefit of producing WMA is the reduction in energy consumption required to heat traditional hot mix asphalt (HMA) to temperatures in excess of 300° F. These high production temperatures are needed to allow the asphalt binder to become viscous enough to completely coat the aggregates in the HMA, provide good workability during laydown and compaction, and durability

during traffic exposure. With its decreased production temperature, WMA affords the additional benefit of a reduction of emissions and fumes generated at the plant and the paving site.

On Thursday Sept 30, 2005, Peckham Materials Corporation conducted a trial of warm mix asphalt from their Middle Falls, NY plant using emulsified asphalt as the binder. The intent of this project was to experiment, both in production and laydown, with one of the warm mix processes and compare a WMA mixture to a similar HMA. The only differences in the two mixes were the liquid binder and mixing temperatures — the WMA utilized an emulsion rather than a PG binder and production temperatures were lowered by 100-150° F from traditional HMA.

The project was on Ryan Road in the town of Greenwich. Initial WMA loads to the paver were somewhat cool, 150° F. As production continued, temperatures averaged about 180° F. The paving crew and operator reported no problems with laydown, even with the cooler loads at the beginning of the day's production. The proposed lift thickness was 1.5 inches. The road was typical of what would be considered a candidate for a single course overlay of HMA: a rural road, in fair condition but with relatively good crown and cross section.

Compaction was performed with a 10-12 ton dual steel wheel roller and consisted of two passes — a vibratory pass in, static com-

paction pass out. The second pass was static in and static out. Density readings were 141 lbs/ft³, which is comparable to the similar HMA mix. Quality control staff took samples to check for asphalt content and air voids. The mix looked very good on the road and similar to HMA in the truck.

The construction crew reported that there were no fumes from the WMA. The material was relatively easy to compact with roller marks coming out with no problems. They did mention that handwork was a bit more difficult. This most likely was due to the initial "cool" temperatures of the mix. Overall, the construction crew's comments were very favorable. They also reported that traffic did not move or "roll over" the centerline joint as they crossed over it.

Operationally at the plant, there were no issues handling the steam that was produced during production. The plant crew had prepared the lines for the emulsion and was set up to pump it from a tanker and re-circulate back to the tanker. They did, however, notice some inconsistent temperature issues. This can be attributed to caution the crew exercised at start up and inexperience in producing WMA.

Several members of NYSDOT, the Town of Greenwich Highway Department, Peckham Materials, NYMaterials, and QC/QA Labs were present during the construction of this trial project. The general consensus of the observers was very favorable. Peckham Materials' staff has plans to periodically visit the

project site and monitor its progress as a comparison to the HMA that was used on another portion of the project site. So keep tuned... warm mix asphalt could be a "cooler" alternative to your paving needs. ○

