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## BLUE DIAMOND MATERIALS –

*Bringing EcoMat® Warm Mix to the LA Basin One Job at a Time*





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Blue Diamond Materials is a leader among hot mix asphalt suppliers within the Los Angeles Basin and surrounding areas. They currently have six plants at five separate locations; all awarded the National Asphalt Pavement Association's Diamond Achievement and Diamond Quality status. Blue Diamond Materials continues to demonstrate their concern for the environment through the use of Recycled Asphalt Pavement (RAP) and other products like their new EcoMat® Warm Mix product. Lonnie Clausen is the Account Manger for the Blue Diamond Materials LA area locations and comments, "At Blue Diamond Materials, we are and remain extremely conscious of our impact on the environment. This is why we are currently leading the effort to introduce Warm Mix technology to the Los Angeles area through our EcoMat® product. The production and use of Warm Mix comes with many benefits, including reduced fuel consumption and a decrease in the production of greenhouse gases.

It reduces fuel consumption or uses less energy because EcoMat® is manufactured at lower temperatures and consequently installed at lower temperatures. Temperatures can be reduced anywhere from 50 to 75 degrees Fahrenheit. This results in engineering and construction benefits as well, as it actually extends the paving season and allows for better compaction. Additionally the asphalt goes down blacker and stays black longer. That is mainly due to the fact that the light ends or low molecular weight organic compounds such as methane, ethane and propane do not burn off in the oil due to the lower temperatures. The



process is also better for those that work around asphalt each day. The lower temperatures mean much less smoke or fumes coming off of the plant, mixer, truck or paver hopper. In addition, the contractors are allotted more time to put the material down due to the fact that the material is not subjected to extreme heat loss at the plant. This also allows for improved joints, better hand work and an overall more pliable material." Studies show that running Warm Mix can reduce energy consumption during the manufacturing of the asphalt pavement mixture by an average of

20 percent, which decreases total life-cycle greenhouse gas emissions by 5 percent. This equates to 1 million tons offset annually.

There are a number of different types of Warm Mix products on the market today, including those offered with liquid additive, pelletized additive, flake additive (wax) and liquid foaming or water additive. Blue Diamond Materials utilizes the liquid foaming process, whereby water is injected in small amounts into the hot bitumen. The water is transformed into steam which increases the volume of the bitumen and reduces

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its viscosity until the material has cooled. The foam then collapses and the bitumen behaves as a normal binder. They say water and oil don't mix which is true, but it does create a foaming action, that in turn reduces the viscosity of the binder, allowing for sufficient coating of the aggregates, while maintaining good workability and durability.

Another big benefit of Warm Mix would be the fact that it allows for higher usage of RAP material. According to Lonnie Clausen of Blue Diamond Materials, "I believe the liquid foaming process actually reacts better to RAP, which can increase our use of recycled material even further. Using both Warm Mix and recycling just makes sense and the combination of both will bring us even more reduction of greenhouse gas emissions. In addition, all of us save valuable materials from ending up in landfills, we conserve virgin aggregates and we end up reusing the petroleum fraction of our product. Our goal is to increase the use of our

EcoMat® Warm Mix product and someday have it represent the majority of material produced at our plants."

This will be accomplished one job at a time, which is exactly what Lonnie Clausen and others at Blue Diamond Materials are focusing on. "My job is to educate our customers on the benefits of this product and to also point out that they can be environmentally conscious without dealing with any increase in cost or loss of quality. Even though we have incurred large upfront costs in equipment and technology, we have made the decision to look at the big picture and not pass these costs on to our customers. The liquid foaming process does not change the mix in any way and it is interesting to note that we only use around one quart of water per ton of asphalt."

Lonnie Clausen recently successfully recommended the use of the EcoMat® Warm Mix product to a contractor and their client, a bank in the City of Industry. More than 300 tons of EcoMat® Warm Mix asphalt was installed at the bank site on Veterans Day, November 11, 2009. The two day job also included the use of around 700 tons of conventional mix for comparison reasons. Another Warm Mix job will soon begin for Exxon at their refinery in Torrance, California. This will be a 6,000 ton project and the benefits to a company like Exxon go even further, considering their emphasis on environmental issues.

Surprisingly, California has been slower to accept Warm Mix as a



specified product. States like Texas have fully embraced Warm Mix and nine other states follow with promising regular results. Clausen comments, "We will be installing three more warm mix plants in 2010 and we will continue to push Caltrans and local agencies to get onboard and begin specifying Warm Mix on public works projects. We hope to get LA County to allow a test project soon and hopefully grow from there. Four of our five plants in Irwindale, Inglewood, Sun Valley and Victorville will be online with Warm Mix plants in 2010 and we are ready to fulfill Warm Mix, as well as emulsion and seal coat orders for Los Angeles, Orange, Venture, San Bernardino and Riverside Counties."

Blue Diamond is not the only one leading the push for warm-mix asphalt. On Tuesday, March 31, 2009, NAPA President Mike Acott testified before the U.S. Congress that the asphalt pavement industry is on the verge of several major breakthroughs in sustainable asphalt pavement technology. Acott briefed

the House Science and Technology Subcommittee on Technology and Innovation about how asphalt reuse/recycling, warm mix, Perpetual Pavement, and porous asphalt will help pave the way to a more sustainable future.

The focus of the hearing was on the role of research in mitigating the impact of transportation infrastructure on the environment, with an emphasis on climate change. The Committee on Science and Technology will write the research portion of the next transportation authorization bill. For the full testimony from NAPA's Mike Acott, including video and transcript, visit [www.hotmix.org](http://www.hotmix.org).

Blue Diamond Materials offers many other products in addition to EcoMat® warm-mix asphalt, including: ARHM, CRUMAC, TMAC, RAC, permeable asphalt pavement, integrated color, and super cold mix

"temporary asphalt". They also market SS-1h emulsion and asphalt sealcoat materials. Blue Diamond's asphalt products have been used in everything from airport runways and seaports to parking lots and public highways and have met CalTrans, Greenbook, LA City Brownbook, FAA, and many other rigorous specifications. Contact Blue Diamond today, at (800) 300-4240 or online at [www.sullymiller.com](http://www.sullymiller.com). CAM