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Sripath PGXpand®

Used to Reduce Rutting in India

Bitpath Pvt. Ltd., located in Mumbai, India, is an affiliate of Sripath Technologies LLC, New Jersey, USA. Recently, Bitpath and PATH India Ltd. successfully completed a roadway trial, incorporating PGXpand modified bitumen into the wear layer, on a four-lane kilometer stretch of the Agra-Gwalior Highway in India. Lion Engineering Consultants were retained by National Highway Authority of India (NHAI) to assist with the project.

Sripath® develops, manufactures and markets a range of innovative additives used to enhance performance of bitumen. Sripath is a global company, with offices, affiliates and agents in USA, India, Australia, UK, Brazil, and South Africa.

PGXpand®, a specially engineered polymer, is designed to interact with bitumen in a very unique and innovative manner. PGXpand enhances high temperature properties of bitumen without impacting low temperature properties. “PGXpand delivers outstanding rutting resistance, fatigue properties, long-term durability, and overall roadway performance,” said Krishna Srinivasan, president of Sripath Technologies.

Prior to the field trial, PGXpand was evaluated by PATH India and an independent renowned research facility. Based on this evaluation, a mix design for the field trial was finalized and approved.

According to Sachin Raje, general manager of Bitpath, “PGXpand is highly dosage efficient, about 1.5 weight percent of PGXpand was added to a VG30 grade bitumen for this trial to create a PMB. The mix based on this PMB was used to pave a 30-mm wear layer on a 4-lane-km stretch of the Agra-Gwalior highway near Morena, Madhya Pradesh, about 40 km from Gwalior.”

The Agra-Gwalior Highway is part of major arterial expressway connecting the northernmost tip of India to its southernmost tip. Gwalior is a major city in the State of Madhya Pradesh, about 120 km south of Agra and 340 km south of New Delhi. The highway is subject to heavy truck and vehicular traffic all year round and is exposed



Sripath PGXpand® modified bitumen is placed on a field trial to improve rutting performance of a major highway in India.

to high air temperatures, in excess of 45 degrees C, for extended periods of time.

“Rutting has been our main concern on this highway,” said Mr. Dharmendra Mishra, quality control manager, PATH India. He further stated: “With PGXpand, we hope that our problem is resolved successfully.”

PGXpand was easy to incorporate into the bitumen, mixed within one hour at a temperature of 160 degrees C. The polymer lowered the viscosity of the bitumen and allowed for reduction of the paving temperature from 160 to 130 degrees C. Overall, it was helpful in reducing both energy consumption and overall costs.

“The PGXpand Modified Bitumen trial was very successful. It was hassle-free to manufacture the PMB and the Mix, it was simple to transport the Mix to the site, and the roadway was easy to pave. We are waiting for the post-trial evaluation results and, if everything looks good, we will surely use PGXpand on our other projects,” remarked Mr. Nakul Agarwal, Project Head, PATH (India) Ltd.

Samples of the loose mix, PMB, and post-compaction field cores were collected and submitted to the independent research facility for evaluation and testing. The

Agra-Gwalior Highway section from the marker at 71 Kms to the marker at 69 Kms, when travelling from Gwalior to Agra, will be monitored over the next few months to gauge the effectiveness of the trial.

Deepak Madan, Chief Marketing & Business Development Officer at Sripath Technologies elaborated on other applications of PGXpand, he said: “PGXpand is also used to manufacture hybrid PMB systems, allowing engineers to design mixes with lower levels of elastomeric polymers while delivering better or equivalent roadway properties. PGXpand Modified Bitumen can also be used in hot spray seal applications on roadways, allowing for improved workability and better performance. PGXpand Modified Emulsions are used for repair and maintenance applications in the paving industry to deliver long-term durability and reduce frequency of road repairs.”

“PGXpand has been tested, evaluated, and vetted by leading experts in academia, industry and transportation agencies from around the world. It has been trusted and effectively used on roadways across the globe since 2015,” remarked Sachin Raje, General Manager of Bitpath.

For more information, visit <https://sripath.com>