Success Stories
Over 100 years of experience

SCREG-EST

IKA® revolutionizes the volume production of polymer-modified bitumen.

Maximum production rate up to 15 tons per hour is achieved.

A continuous process with continuous dosing and incorporation of polymers (sbs.eva) and bitumen into the inline IKA® Dispax Reactor 2000 PB.

IKA® Polymer Modified Bitumen (PMB)

THE CUSTOMER
A specialist in stable highways.

SCREG-EST researches processes that make highways tougher. Since being founded more than a hundred years ago, SCREG-EST has been shaping the market with innovative, future-oriented products. SCREG-EST, a subsidiary of the COLAS group, the world leader in highway construction, specializes in the construction and servicing of highways and has more than 2,000 employees. Around thirty locations in eastern France guarantee the supply of ultra-modern asphalt products with full geographical coverage. Experienced engineers develop technical solutions that make highways, bridges and runways more stable and longer-lasting. SCREG-EST continuously improves products and processes for customers in the private and public sectors.

SCREG-EST's engineers develop highway-surfacing materials that have exceptional characteristics, including high temperature stability. Special coatings help improve the strength and long service life of highway surfaces. Polymer-modified bitumen (PmB) makes an important contribution here. The polymers dissolve in the bitumen and give the outer layer, the binding agent, the staying power it needs to withstand daily stresses, which include temperature variations, deformation, fissuring and material fatigue.

"IKA® Bitumen Dispax surpasses all our expectations. We had planned to double productivity. Thanks to IKA®, we've quadrupled it!"

Vincent Scheffler, director of the highway and binder technology branch

THE ADVANTAGES AT A GLANCE:

- Production capacity quadrupled by IKA® inline technology
- Costs slashed because of higher productivity
- Genuine competitive advantages because no longer dependent on batch volume production
- Smaller space requirement
- Easily integrated into existing plant

IKA® R&D Bitumen Plant

THE CHALLENGE
To double productivity.

There is an increasing demand for polymer-modified bitumen, especially for the heavily stressed traffic-bearing surfaces of highways and airports. So the task of doubling productivity at SCREG-EST sounded plausible, but not very realistic. Many phases in the process of asphalt production are determined by the plant. That made a doubling seem very unlikely without a complete change in the process. Since bitumen is still widely produced by batch processing, solving the problem required a high degree of creativity. Keeping a conventional 60-tonne tank at constant temperature and stirring the desired dosage of polymer into the bitumen is costly in time and energy. Nor does batch processing allow the polymer concentration to be altered later: before any change is made, the batch has to go through the complete mixing and homogenizing process. This made the existing production process extremely inflexible and in urgent need of optimization. It seems that the necessary conditions for producing bitumen would preclude shortening production time and thus increasing productivity. So the design and process engineers at IKA® were challenged to develop an alternative to batch operation: a new way of manufacturing bitumen.

THE SOLUTION
A combined mixing and dispersing machine.

While seeking an alternative to batch processing, IKA® and SCREG-EST engineers made an important discovery. IKA® already had all the necessary mixing techniques on hand, though not in a single machine. The task was now to combine the different processes into one machine. Only this would make a continuous one-pass mixing process possible. Driven by this idea, the IKA® and SCREG-EST engineers got to work. The result wasn't long in coming. DISPAX-REACTOR® DR 2000-PB, the combined mixing and dispersing machine, opens up a completely new way of making polymer-modified bitumen. A gear wheel pump drives bitumen at 180°C directly into the first generator stage. A special solids dosage system delivers the polymer into the Dispax Reactor's mixing chamber. Further additives (in powder form) can be added. The components come together in the first generator stage and go through a first mixing and dispersing process. Further dispersion processes take place in the second and third generator stages. The optimal homogenization achieved by this three-stage rotor-stator combination gives the bitumen great long-term stability. A gear wheel pump then delivers the polymer-modified bitumen into storage tanks.

THE BENEFIT TO THE CUSTOMER
A quantum leap in productivity and economy.

Replacing the laborious batch method is the key to a very flexible production process. IKA® Bitumen Dispax works as a continuous inline process. It can manufacture up to 35 tonnes of PmB in an hour. The premixing of polymer and bitumen has been completely done away with. All operations are carried out in closed systems. As a result, IKA® Bitumen Dispax achieves constant mixing qualities. It requires little space and consumes much less energy than the batch method of PmB production. Another plus point of IKA® Bitumen Dispax is its flexibility. It can manufacture small delivery quantities of PmB in different concentrations without loss of time, which is technically impossible with batch processing. Even a firm that currently produces PmB by batch processing can take the opportunity to integrate IKA® Bitumen Dispax into its production plant and get the benefit of the continuous mixing process. IKA® Bitumen Dispax thus revolutionizes the process of manufacturing polymer-modified bitumen. It saves time and resources while providing great flexibility during production.

IKA® Works (Asia) Sdn Bhd (Company no.: 340448-K)
No. 17 & 19, Jalan PJU 3/50
Sunway Damansara Technology Park
47810 Petaling Jaya · Selangor · Malaysia
Tel. +60 3 7804-3322 · Fax: +60 3 7804-8940
E-Mail: sales@ika.com.my · www.ika.net · www.ika.com.my