

Silo-Turm für Gesteinskörnungen vermeidet Fehlmischungen bei der Asphaltherstellung

Wednesday 30 May 2007

Challenging in aggregates

E-MAK's innovative Challenger system offers a novel solution to the problem of stockpile contamination that can occur in asphalt plants. This is an important point as several of the speakers at the recent **World of Asphalt** conference in Atlanta, Georgia, US identified stockpile contamination as one of the main sources of product quality problems when sourcing material from asphalt plants. E-MAK's solution is straightforward.

The Challenger is an aggregate processing system that offers a new approach to asphalt batching. The conventional method of storing aggregates is to use open stockpiles and load these into the plant with a wheeled loader. By comparison, the Challenger stores the different grades of aggregate vertically in sealed hoppers. Because the system is used to store aggregate, it can be integrated into virtually any asphalt plant.

The firm has taken care to patent its technology and according to S Emre Gencer, a member of the board of directors for E-MAK, "It took us about nine years to make the Challenger the way it is now." Two of the first units were delivered to the Turkish firms Isfalt in Istanbul and Belko in Ankara. Gencer said: "We've sold 12 systems now. It takes a time for a company to learn how to use the Challenger."

As the technology is now well proven, E-MAK feels the time is right to find new customers in overseas markets. In addition to tackling the issue of stockpile contamination, another benefit of the Challenger system is in fuel savings and this advantage will be particularly beneficial in countries with colder climates and high rainfall levels as E-MAK explains.

Because the aggregate is stored inside bins rather than out in the open, rain does not cause humidity levels in the stone. For stone sizes of 25-70mm, E-MAK estimates that humidity can be up to 25% so keeping the stone in the dry provides an immediate fuel saving when it comes to using the material for asphalt batching. However Gencer said that with the Challenger, the stone humidity problem is eliminated. "Once the material is crushed it never touches the air until it's used as asphalt. Everything is fed to asphalt plant depending on need."

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E-Mak's Majestic asphalt plant is seen here with the Challenger aggregate processing system

The Challenger also offers an alternative for sites with restricted space in urban areas or where land

prices are high. Because the aggregate is stored vertically, the plant can feature a much smaller footprint than a conventional facility where aggregate stockpiles are spread out in the open. This also provides an advantage in terms of planning regulations in urban areas as storing the aggregate inside hoppers means there will be little or no dust emissions from the site, unlike the conventional open stockpiling method.

The crusher is set to suit the mix design and screening is integral to the system, although E-MAK does not supply a crusher with the Challenger and leaves the choice of unit to the customer. However, Gencer did say that a vertical shaft impactor (VSI) type crusher provides the best quality of aggregate for this application and he added, "...because the shape of the stone is good."

By adjusting the VSI, the crusher will provide the required stone size while the system is able to recirculate any material that passes through the screening system because it is too large. Gencer admits that the Challenger may not entirely replace open stockpiling of aggregates for all mixes and Gencer said, "For wearing courses we need fine aggregate."

For these or special mixes, conventional cold silos can be kept as a back up but Gencer said that with around 85% of mixes, the Challenger system will supply the entire aggregate needs. Gencer explained that the Challenger system can give an asphalt batching plant a major commercial advantage and said, "Most of our clients can tender at lower prices because of the lower energy costs" .

E-MAK
www.e-mak.com