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STACY GOLDSWORTHY

Air Classification of manufactured sand to control production costs

Manufactured sand has developed from being perceived as a waste product to a sought after commodity. Modern crushing and screening systems have created that potential to use manufactured sand in a range of concrete and asphalt applications. There are still limitations with its use, however, especially when the amount of filler contained is high. Traditionally removing filler has been done by wet classification, but this has been at substantial cost to the quarry operator. Dry processing is developing into a cost effective and value-adding alternative.

The move away from wet classification has been driven by the need to reduce operation and maintenance costs associated with these activities. Sourcing of water to operate these plants is becoming increasingly difficult. The treatment and reclamation costs of sedimentation ponds have been an expensive but necessary activity. By reducing these costs operators can reduce site costs.

Dry classification of filler is generally done using air. This involves moving air currents through free falling manufactured sand. The lightweight particles are effectively removed and transported to an independent separation stage. The filler can then be classified as either a general-purpose product or, as some innovative customer's are doing, treating this material and selling it in new and exciting industry applications.

To handle these materials, innovative operators are turning to a different style of plant design. Previous plant design has been to produce aggregate to stockpile. There have long been issues with stockpiling and aggregate quality. New methods are allowing aggregates to report to silos, which maintains the integrity of aggregate and allows for precise control over the production of concrete and asphalt. This reduces the defect rate.

The upside for moving to these systems is two fold. Firstly, inventory control is controlled. Surplus aggregates can be reprocessed at minimal handling cost. Secondly, there is the opportunity to produce a range of speciality products that attract a premium sale price.