



SIAM WHITE CEMENT COMPANY LIMITED

Installation of a Separator Using Air Stream and Gravity for Separating Materials

SUMMARY OF THE OPTION

Siam White Cement Co., Ltd (SWCC) is located the Saraburi, Thailand, and is the largest white cement producer in Thailand with a production capacity of 160,000 tons of white cement.

The Tube Mill, a grinding machine used in the Raw Mill at SWCC, was found to be inefficient for two reasons. Firstly, it is unable to separate fine (i.e. powder) material from coarse material. Secondly, there is no dehumidification of materials before grinding, and new feed materials are directly conveyed into the Tube Mill. As a result, materials agglomerate and the Tube Mill cannot separate different size of materials effectively. Materials therefore must go through the Tube Mill again for further grinding, which leads to excess electricity consumption. In addition, agglomerated materials can cause unexpected shutdowns.

A V-separator, which was invented and installed by engineers at one of SWCC's sister plants in the Songkla province, can be used as an accessory to the tube mill to separate materials. The V-separator is similar to a conventional separator, except in the design of static guide vanes. The V-separators air flow and gravity to separate fine materials from coarse materials, but also dehumidifies materials at the same time. This increased the separation efficiency significantly because agglomeration of materials is reversed and therefore materials do not need to go through the Tube Mill again.

The construction and installation of a V-separator will cost US\$ 20,000, and annual electricity savings are US\$ 8,913. The payback period of this option is 2.2 years. The implementation is expected to reduce electricity consumption at Raw Mill 2 by 155,000 kWh/year (electricity consumption by the V-separator has already been deducted), which equals 96 tons of CO₂ emissions. At time of writing of this case study the construction and installation of V-separator was in progress.

KEY WORDS

Cement, Thailand, Electric Motors, Fans and Blowers, Tube Mill

FOR MORE INFORMATION

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