

## **Kemco dry sand making plant for cement companies**

The Kemco dry sand making plant, V7 was developed in 2000, since then over forty V7 plant installations have been commissioned in Japan up to the end of 2006, while the natural sand supply has been rapidly eroded.

Initially the main users were in the quarry industry with medium sized of plants with a 60 tonne per hour capacity being most common.

The first sale of a V7 plant to a cement company was in 2001 and other major cement companies soon followed. Cement companies are becoming significant customers for Kemco V7 dry sand making plants.

## **What encouraged cement companies to invest in V7 plants?**

Cement companies run limestone quarries to provide the key ingredient for cement. It is commonly relatively easy to increase the quarry output, but expensive to increase the cement plant output. The cement companies have entered the manufactured sand market using Kemco V7 plants. The by-product of this sand, being limestone dust, is sent back to the cement plant being a cement ingredient that can go direct to the ball mills.

The cement companies already have an established customer base, being concrete manufacturers, and the sand is sold through the same distribution channels.

V7 plants are built alongside the cement plants and are fed from the same limestone source from the cement plant's quarry.

The cement companies have established a very efficient shipping facility at their private port and bulk transportation facilities. These are used for both the cement and the sand. Thanks to lower shipping costs, the potential market area is considerably wider than for, say, a local quarry.

Kemco V7 plants are operated by all the major cement companies in Japan. Two V7 (100 tph) plants are operated by one cement company and third plant is already under construction. Their sand production will exceed 1.2 million tonnes a year after the third plant is commissioned. Five more V7 (60 tph) plants are now run by other cement

companies. All of these investments were made over the last 2 years and there are still more new plants being planned.

Some Japanese steel mills are also running limestone quarries to meet their requirements for steel production. They are also potential V7 customers. One V7 (100 tph) plant is already in use with a steel manufacturer.

## **How about operating costs?**

The major production cost is from replacement wear parts and power. As limestone is usually soft, the wear part cost is not so high. Power cost is estimated as 50 to 80 cents per tonne of production, depending upon local supply costs. As the V7 plant is a dry system, waste water disposal is not required and labour costs are minimal as the V7 plant runs automatically without the need of an operator.

V7 plant is a very profitable adjunct to the cement companies business.

## **Technical benefits**

Control over the filler content and sand gradation is made easy by the integrated V7 system, the key components being a specially designed Vertical Shaft Impactor and Air Screen. Crushed rocks tend to produce a deficiency in particles ranging from 1.0mm to 0.15mm and an excess of particles retained on the 1.2mm sieve. The V7 plant can correct this problem by producing evenly graded product while the Impactor produces very good grain shape. The quality of the V7 manufactured sand provides a huge benefit to the concrete manufacturing customers helping to make excellent concrete.