

All roads lead to kerb-making

South African manufacturers can benefit from a comprehensive range of kerb-making equipment available locally through Pan Mixers South Africa (PMSA) – the leading manufacturer of concrete block, brick and paving machinery in Africa.

THE RECENT ANNOUNCEMENT by transport minister Sbu Ndebele, of a multi-billion rand upgrade of South Africa's road infrastructure could provide local contractors – and the industry in general – with a platform for significant growth and expansion.

Ndebele announced in April that the Department of Transport plans to invest a total of R22-billion over a four-year period, as part of a national upgrading project.

Although PMSA director Walter Ebeling points out that any positive effects of the announcement will not be felt by the industry in the short term, he does note that there is potential for growth in the kerb-making sector of the South African construction industry.

"The damaging effects of the recess-

sion have resulted in a large number of local construction companies being stuck with high volumes of capital equipment that is not being fully-utilised.

However, as new roads continue to be built, there will be an increased demand for the manufacture of kerbs," he explains.

Ebeling points out that kerbs are manufactured through three industry-standard methods, namely; wet-cast manufacturing, precast manufacturing and by pressing.

"PMSA offers a comprehensive range of equipment in all three methods of manufacture, and can assist clients in selecting the option that is best-suited to their needs."

For hermetic pressing, Ebeling notes that Pan Mixers represents the British-manufactured Wil-EI-Mil rotary press. "Wil-EI-Mil is experienced in providing engineering solutions

to concrete pre-cast customers using the wet pressing process," he continues.

Ebeling points out that the Wil-EI-Mil press hydraulic power pack is mounted next to the press, as opposed to the top; thereby, improving ease-of-maintenance while minimising the risk of any oil leaks that may contaminate the products being made.

"The product off-packing system on the rotary press is electro-pneumatically operated, and lifts the freshly-pressed product from the mould with a vacuum plate, before placing it onto a transfer carrier which places the product onto a curing pallet. Presses can be used for the manufacture of paving slabs as well as kerbs."

Ebeling notes that the Wil-EI-Mil press densely compacts concrete without vibration. "When using a press, the wet concrete is batched into a mould, which is lined with a filtering material on the top and the bottom. The mould is indexed to the next position and a 400 ton hydraulic cylinder then squeezes all the water from the mix through the filter material above and under the mould, and the concrete product is formed within a 15-22 second cycle time," he explains. "The process

is faster, uses less cement in the concrete mix and is less labour-intensive than the traditional method, where the concrete would be poured into moulds, vibrated and removed only once it is cured."

PMSA supplies a comprehensive range of mixing and batching plants and moulds for wet cast product manufacture as a lower capital investment alternative to a press or pre-cast method with a block-making machine, says Ebeling.

He notes that the third method is by manufacturing kerbs using a block-making machine. "Dry concrete is fed into the mould in the block-making machine, and is extensively vibrated and compacted into shape. Using this application, the product is usually manufactured with a topping feed attachment, in order to ensure that the coarse concrete remains in the base and body of the kerb, while a thinner and smoother layer is placed on the top surface."

Ebeling does; however, note that the challenge with this application is that standard kerbs are generally 300 mm in height and, as a result, the manufacturer would require a large block machine, such as the RE1400, which has a high stripping area.

"The major advantage of the RE1400 block machine is that it is powerful and robust, and is capable of producing up to 3 600 figure-7 concrete kerbs per 10-hour shift, using relatively drier concrete."

Regardless of the manufacturing process selected, Ebeling stresses the importance of correctly mixing, compacting and curing the product. "Properly mixed, compacted and cured concrete allows for increased-strength, lower permeability and less cement usage," he notes. "The curing process is influenced by the heat and moisture of the environment in which the concrete is being stored, and it is vitally-important to ensure that the product is cured for the correct amount of time, as improper curing can cause inferior strength and cracking."

Ebeling notes that concrete quality is becoming increasingly important in the South African construction sector, and he concludes by adding that PMSA is committed to providing its clients with after-sales and technical support throughout the entire manufacturing process, in order to ensure that all products are compliant with SABS quality standards. ■

Above:
PMSA director, Walter Ebeling.

Right:
Wil-EI-Mil is experienced in providing engineering solutions to concrete precast customers using the wet pressing process.

