



Paving *the way*

Paving work on a new container terminal at the Port of Doha, Qatar, is surging ahead, driven by the ambitious and demanding attitude of the Port Authority, which has imposed a guideline of 2,500 square metres to be laid each day (per 24-hour shift).

Paving techniques

Ultimately, this should result in 222,000 square metres of terminal paving being put in place within a five-month period. Achieving these goals with optimal efficiency and commitment obviously requires a high level of human dedication to the cause, but would not be at all possible were it not for the mechanical paving techniques employed. It is here where



German efficiency at work

German firm Optimas' expertise have proved useful, with two Optimas H 77 Comfort laying machines and an Optimas screed system currently deployed on the Port's operation, laying blocks 20x10x12 in a herringbone design.

Factors such as price and the slow pace of manually laid projects have deterred contractors from including block paving in their tenders of late. Optimas now believes that increasingly tight deadlines and the occasional problem of repetitive strain injury with manual laying have led to the industry turning to the benefits of machine-laid block paving. More obviously, with the concise and constraining demands for efficiency at Doha an excellent example, the much faster production rates obtainable have become an increasingly important factor in winning mechanical paving contracts. As an alternative to asphalt, block paving has a number of features that can appeal sufficiently to engineers and clients. Among these, Optimas lists aesthetic considerations and low maintenance costs, in conjunction with a life of well over 25 years - making block paving certainly seem a practical option. With their resistance to concentrated loads, concrete blocks are ideal for ports and, unlike asphalt, are undamaged by fuel and hydraulic oil

spillages, the German firm argues. Differential settlement, caused by the varying nature of fill materials in ports, can prove a real problem within paving in the industry. In such a situation, Optimas argues that the serviceability of mechanically laid paving makes for easy maintenance without cracking: if settlement or rutting occurs, blocks can be removed, repairs rapidly made to the base and the same units reinstated. For the potential of machine-installed paving to be fully realised, though, proper training and available trained and qualified subcontractors to operate a sufficient number of dedicated laying machines are needed. Mechanical paving has now become the accepted method of surfacing for many



Another 221,000 square metres of terminal paving to go ...

engineered applications, and the personnel needed to implement round-the-clock projects such as Doha are accordingly vital for efficiency. This also demands fast and effective training programmes, with performance guidelines continuously rising - new operators in the mechanical paving business are under immediate pressure to reach laying performances of 80 – 100 square metres per hour per machine as quickly as possible. In the case of Doha and as a company policy, Optimas follows a philosophy of guiding its clients to a high laying performance by providing intense training direct to staff on the paving site, and cooperating with professional paving consultants (Mirage Paving, New Zealand, in the case of the Port of Doha) to ensure the successful completion of the individual project. Other industry trends observed by Optimas include the increased prevalence of total cost of ownership in the concerns of port authorities and architects. Integrating initial costs, maintenance and replacement or alternative use in their calculation when preplanning container terminal projects, the German manufacturer argues that those responsible for investment will find the long-term maintenance and replacement costs of block paving to be lower, even if the initial outlay is more. The laying method



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represents a major component of lifetime costs and cost studies demonstrate that machine-laid block paving for large commercial and industrial areas is very competitive based on a 25-year period compared to asphalt, Optimas states, arguing that the increasing number of recently completed projects gives evidence that

mechanical paving is the current ‘state-of-the-art’ for container terminals. And, with the demands for efficiency stipulated by port authorities unlikely to desist, the future should see mechanical paving defying the boundaries of sense or possibility to continue meeting the most stringent of deadlines. 