



PALLETS CAN MAKE OR BREAK AN OPERATION

Optimisation of pallets in the manufacturing process is one of the most cost-effective and easiest ways to boost output and improve the quality of products made with the existing machinery.

This often-overlooked element in the manufacturing process is, in fact, one of the most important, as the pallet serves as the foundation of any production process and requires a perfect match between the equipment used, the mix design and the type of product being produced. Unsurprisingly, a well-matched pallet will produce better-quality products more quickly than less suitable types.

One company that understands the importance of pallet selection is local equipment manufacturer PMSA (non-producer member of the CMA), which

(Top): UPplus Pallets with pavers during production process.

(Right, from top): UPadvanced Pallets up close; GMT Pallet up close.

has focused a great deal of attention on studying the characteristics and performance of different types of pallets on local production lines. This has also led to the company stocking and selling a wide range of pallets suitable for most production lines and manufacturing conditions.

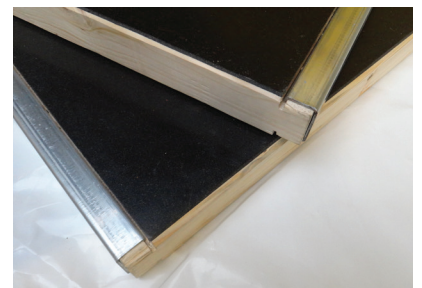
Quintin Booyesen, sales and marketing manager of PMSA, explains that pallets are one of the most basic parts of the production cycle, yet they hold an important key to achieving better efficiency and savings on cement and materials. Drawing on recent studies, he also reveals some of the criteria which make a pallet good and the different requirements for varying types of plants.

Different requirements

"When considering which pallets to use, it's important to start with the most important factor: production efficiency. Here one needs to consider factors such as the rigidity and density of the material used in the manufacturing of different pallets and understand that denser

materials transmit vibration better for faster mould-filling and settling. This means production speeds can be increased on machinery using the right pallet for the job at hand.

"However, lightweight products or shallow moulds may require different vibration transmission and may benefit more from smoother surface finishes



or the use of ultra-durable polymers that provide benefits in demoulding and surface finishes. Next, one needs to consider the environment in which the products are being manufactured and cured as it may be corrosive, acidic, hot, cold, humid or have other issues that require considerations over and above pure production-related issues," says Booyesen.

"Temperature, mould depth, special mechanical requirements and a host of other factors may also play a role and need to be identified before making the final decision. Lastly, the price needs to be weighed up against the performance and durability of each pallet being considered. Although an individual price tag may sway close decisions, it should never be used as the only determinant, as it's far more important to consider the total cost of ownership and production requirements in the long term.

Different applications

"With pallets ranging from R2 800 for European composite plastic types, to just R280 for locally grown, wet, off-sawn pallets (for a typical 1 400 x 840 x 42mm pallet), and everything else in between, it's easy to see how manufacturers can get confused about the better option. Suffice to say that neither the price nor the perceived quality are the crucial deciding factors: rather, the application is.

"For example, heavy products may require a denser wood with less deflection and lighter product with high abrasion characteristics may benefit through polymer types such as PVC that have better wear-resistance. Alternatively, wet off-sawn pallets may be an alternative in low-wear environments with dry climates that don't need ongoing fungus and moisture treatments.

"Buyers also need to know whether the pallets are going to be handled manually or mechanically, as this also plays a role in determining their required strength and weight. So do temperature ratings, as curing treatments or even climate extremes may require different characteristics. Surface finishes, thickness tolerance and other factors can also lead to end product variances and therefore need to be monitored," says Booyesen.

"It's not always the price that determines the quality or suitability of the pallet: rather, it's the application."

Wide range

"As a result, PMSA has carefully selected a range of pallets for nearly all applications and requirements. These include cost-effective MyWood Advanced Composite and MyWood UP Plus pallets, which are made from European pine, larch or spruce, or the hybrid MyWood Advanced option, which are coated with a durable plastic composite outer layer. Due to higher density on European-grown timber, these imported pallets provide better transmission of vibration than local pine ones and are longer-lasting, all-round performers for general use."

Customers like West End Bricks (producer member of the CMA) have used them with great success, adds Booyesen. "The MyWood UP Plus boards have been perfect for us and lasted more than 10 years on our plant," says plant manager Denver Rambaross. These pallets are easily maintained for internal curing rack plants and are not subjected to excessive mechanical or varying environmental factors, whereas other manufacturers may have to opt for hardwood or solid plastic composite alternatives, or the top-performing hybrid Advanced option from MyWood.

The UP Advanced hybrid pallets are an economical solution that incorporates the rigidity of wooden pallets into an encapsulated plastic bonder upper and lower production surface. These are also manufactured with individual planks and have growth rings orientated vertically, which add strength and rigidity to the pallet. They are proving to be a success at Cape Bricks, where the pallets' extra rigidity and high wear-resistance are ideal for the heavy products being

produced, as well as being sealed and impervious to moisture ingress from the steam-curing chamber.

Problem solved

Another manufacturer, Van Dyk Stene, has opted for PMSA Glass Mat Thermo-plastic (GMT) pallets for its outdoor plant. These proved to be better than wet off-sawn pallets, with no treatment required for moisture and fungus. In this application, the GMT pallets proved to be the perfect balance between low-cost, wet off-sawn wooden pallets and pricier laminated ones.

Van Dyk also found that the smoother surface of the GMT pallets reduced damage and ongoing maintenance to the pallet feeder, compared with wet off-sawn pallets. The higher density of the PMSA GMT pallets transmits vibration better, translating to a better compaction with less voids and, ultimately, better strengths. This has allowed the company to reduce cement mix ratios by at least 20%, compared with the previously used wet off-sawn pallets.

"There are so many factors to consider when buying a pallet that it really does pay to rather speak to our Sales Technical Division, which will be able to advise on the best solutions for specific plant types and conditions," adds Booyesen. ■



(Top): UPplus Pallets up close.

(Above): PMSA GMT Pallets – Van Dyk Stene (Western Cape).