



Figure 1. Holcim Lampung terminal.

LOADING IN LAMPUNG

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DESCRIBES A TERMINAL
INSTALLATION FOR
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Introduction

How to optimise cement dispatch on a limited plot of land? That is the difficult question PT Holcim Indonesia Tbk. had to answer when designing its Lampung terminal. The main issue was that the available area was limited, so there would be only a few parking slots for trucks waiting to be loaded with bulk or bagged cement. That meant an efficient solution had to be found to maximise the output of the plant, in terms of dispatching capacity. Moreover, a wide range of trucks had to be accommodated; flexibility was therefore not an option. To solve these problems, PT Holcim Indonesia Tbk. decided to team up with FLSmidth Ventomatic® as the EP supplier of the Lampung terminal (Figure 1).

The project

The first task was to efficiently supply cement to the plant and store it: a pneumatic transport system fills a 10 000 t Ventomatic® inverted cone silo from self-unloading vessels. The solution was designed so that the compressors on the ship can unload the material without external help at high capacities of up to 250 tph. As power limitations are enforced in the Lampung area, the plant needed to be able to run with minimum power

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consumption. Potentially, such systems can be very energy intensive, so it was indispensable to supply a solution that would minimise power requirements.

The second issue was to optimise cement dispatch. The Ventomatic® logistics system ensures a seamless distribution, by tracking trucks through a system of badge reading from plant entrance to exit. Drivers are equipped with RFID badges, on which the type of cement, quantity, and form are stored, based on the orders. From the terminal's entrance gate, trucks are guided to the inlet weighbridge, then to either the Ventomatic® inverted cone silo for bulk cement, or to the warehouse for bagged cement. Once loaded, trucks proceed to the outlet weighbridge for final

verification and check-out. All operations are recorded and made available for control and invoicing.

The third challenge was to offer very fast and flexible loading solutions for both bulk and bagged cement. Here, the following solutions were implemented:

- A Ventomatic® bulk loader (Figure 2) precisely fills bulk trucks. It is integrated into the silo to limit both equipment installed, and footprint. The interlock with the weighbridge underneath guarantees a high weight accuracy even at a capacity of 300 tph.
- In the packing plant, an automatic high-capacity line is installed: a GIROMAT® EVO V12 twelve-spout rotary packer with vertical axis impeller – with an INFILROT® Z 40 shooting bag applicator – for a capacity of 3600 bags/hr of 50 kg each. These are dispatched to a POLIMAT® palletiser, fitted with a Ventomatic® Flying Fork-Lift FFL (Figure 3) automatic truck loader for stacks of bags, or to a manual truck loader for smaller vehicles.

Here, a revolutionary concept has been introduced to the market: a POLIMAT palletiser feeds bag stacks to the Ventomatic® Flying Fork-Lift FFL, which automatically loads them directly onto trucks without pallets (Figure 4). This greatly simplifies the logistics,



Figure 2. Ventomatic® bulk loader, with movable safety barriers and weighbridge.



Figure 3. Ventomatic® Flying Fork-Lift FFL automatic truck loader for stacks of bags.

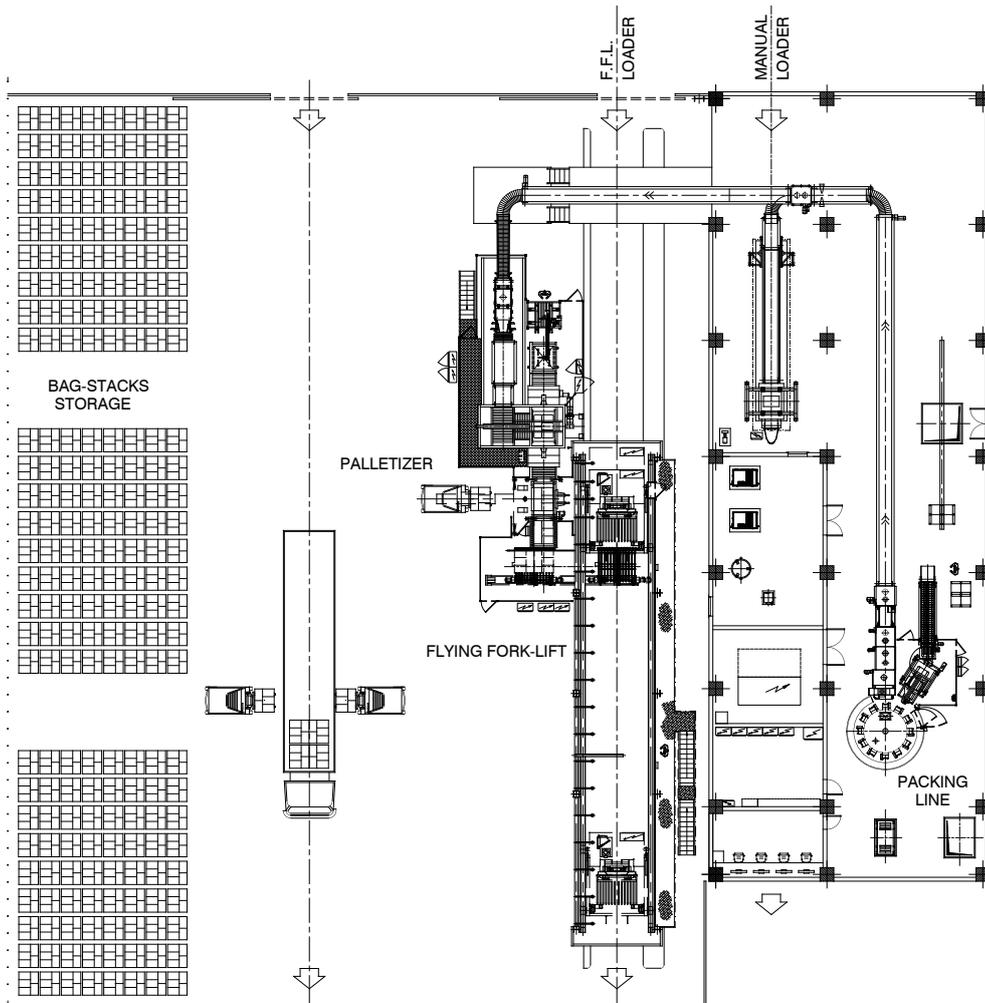


Figure 4. Holcim Lampung packing plant layout.

and reduces bag dispatch costs. Moreover, it allows the loading of trucks at the same capacity as the palletiser – in this case, 3600 bags/hr. Space required for the installation is also limited and storage space is minimised, as bags can be directly loaded without passing through the warehouse, solving the challenge of optimised bag dispatch on a limited plot of land.

This palletiser/loader combination also enables the plant to operate continuously, as trucks are loaded when present in the loading bay and the palletiser is used when no trucks are present. The palletised stacks are then moved by a forklift to storage using slip-sheets.

This solution has obvious benefits for the user:

- 100% packing line availability (regardless of trucks' presence).
- Highest dispatch flexibility and speed thanks to possibilities of direct loading to trucks, warehouse storage, or loading from storage to trucks by traditional fork-lift or Ventomatic® Flying Fork-Lift FFL.
- Elimination of empty pallet logistics and costs.

- Trucks with side walls can be loaded (impossible with traditional fork-lifts).
- Minimal infrastructure needed as the equipment is installed on the ground floor.
- Safe operating conditions.

Another interesting feature is a bag splitter, which divides the bag flow between the manual loader and the palletiser. This way, the line always operates at full capacity, even when small vehicles are loaded manually, as the excess capacity from the packer is sent to the palletiser.

The solution offered would not be complete without an advanced plant supervisory system. The operator in the cargo control room can constantly monitor the smooth operation of the Lampung terminal thanks to the Ventomatic® Plant Supervision System. The status and conditions of

each and every piece of equipment installed is shown in real time and messages are automatically displayed in case of deviation from normal operation. The supervision system also allows FLSmith Ventomatic® Technical Assistance to remotely access the system in the unlikely case that troubleshooting is needed.

Conclusion

PT Holcim Indonesia Tbk. and FLSmith Ventomatic® have successfully partnered to set up a state-of-the-art cement terminal in Lampung, Sumatra. As a 'One Source Supplier', FLSmith Ventomatic® has designed, engineered, and delivered a solution that matched all requirements of PT Holcim Indonesia Tbk., particularly optimising cement dispatch on a limited plot of land.

The system supplied offers flexibility, reliability and high efficiency at reduced costs. Its design allows the loading of any kind of truck, while allowing dispatch capacities of up to 3600 bags/hr.

In an increasingly competitive market, the Lampung terminal provides PT Holcim Indonesia Tbk. with an advantage, keeping operating costs low and attracting customers thanks to its new cement dispatch system. 🌐