

Project Spotlight



Alshaya Warehouse Riyadh, Saudi Arabia

Design and Construction of Warehouse with Multiple Floor Applications



Twintec Saudi LLC recently completed Alshaya Warehouse situated in Riyadh Saudi Arabia. The project comprises three different floor types, Freeplan®, Twintec® ULTIMATE, and Twinplan® covering a total area of 53,120m².

Different slab thickness were designed to cater the required loads and usage of Freeplan® floors on each zones to ensure the reliability of slab and to serve its purpose based from the corresponding design calculation and specification.

Twintec Freeplan®

The Freeplan® areas are classified into three zones with different slab thickness as follows;

- Zone 2 (Multi-Tier Area)
280mm slab thickness designed for 478.9kN service load
- Zone 3 (Marshalling Area)
170mm slab thickness designed for 95kN axle load
- Zone 4 (Picking Mezzanine Area)
320mm slab thickness designed for 560kN service load

Project Data

End User:	Alshaya Real Estate Co.	Pour Days:	40
		Slab Depth:	170mm
Main Contractor:	Saudi Amana		280mm
			320mm
Consultant:	Cairo Consult	Fibre Type:	3D Dramix 80/60BG
M2:	53,120m ²	Fibre Dosage:	25kg/m ³ & 20kg/m ³



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Twintec® ULTIMATE

The area referred to as Zone1 (MLS area) with a slab thickness of 280mm were designed to cater for 478.9kN of service load.

A seamless floor were required on this area as it will have an Automated Storage & Retrieval System (ASRS) sensitive to any type of buffer or vibration which may lead to mishandling of goods.

Twintec Twinplan®

One of the most integral part of this project are the VNA areas which required designing and constructing a DM1 floor slab. Referred to as Zone 5 with slab thickness of 280mm designed to withstand 478.9kN of service load.



The End-User requirement can only be achieved by concrete flooring specialist capable to provide;

- Highly skilled and experienced workers, directly employed and quality motivated
- Dedicated fitness team working alongside experienced finishers
- Precision in-house developed machinery and maintenance
- Robust quality control processes
- Unique concrete mix design, delivery and quality

DM1 floors are required where very narrow aisle trucks are employed to place and pick goods stacked to heights over 13m, where the path of the truck is fixed and the truck is floor supported, i.e. it runs on the floor.

In very-narrow-aisle (VNA) warehouses, forklifts travel 6-foot wide aisles between storage racks with the aid of rack-mounted rails or a wire guidance system embedded in the floor. While moving down the aisles, these lift trucks can raise their forks to retrieve or place products at various levels. For these forklifts to perform as intended, defined-traffic floors must be extraordinarily flat and level. Since the lift truck travels the same route over and over, the smoothness of the wheel paths in DM1 aisles becomes extremely important. Although tolerance only needs to be confirmed in the wheel tracks. Each of the traffic paths should be directly measured, using a continuous-recording floor profilometer configured to run exactly in the wheel tracks.

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