www.twintecgroup.com

Project Spotlight

Al-Sad Warehouse
Sudair, Saudi Arabia

Twintec® STRUCTURAL
SFRC Structural Foundation

Twintec Saudi successfully delivered a high-performance Steel Fibre Reinforced Concrete (SFRC) floor for the Al Sad Beverage Warehouse facility located in Sudair, Saudi Arabia. Designed to support heavy-duty beverage storage and intensive forklift traffic, the floor system provides enhanced load-bearing capacity, crack control, and long-term durability while reducing joints and maintenance requirements. The solution was engineered to meet strict flatness and performance standards essential for high-density warehouse operations.

The design and application of Twintec® STRUCTURAL supports a Clad-rack system in which the racking structure forms the primary load-bearing framework of the building, transferring vertical and lateral loads safely into the structural slab.

This required precise floor tolerances and the ability to withstand significant point loads from rack uprights. By integrating structural flooring expertise with the warehouse's operational demands, Twintec Saudi delivered a reliable, efficient SFRC structural foundation tailored for modern beverage logistics.

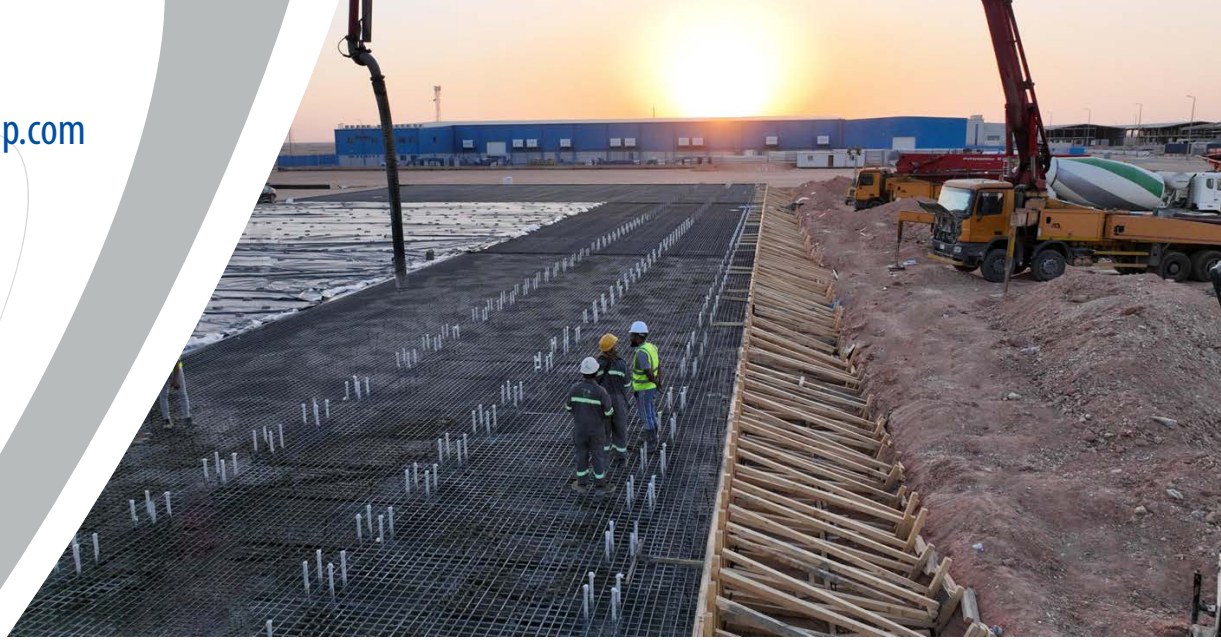
The successful completion of this project reinforces Twintec Saudi's reputation for delivering engineered industrial flooring solutions that combine structural performance with construction efficiency.

Project Data

Owner: Al Sad Modern Advanced Company
Main Contractor: RIFAF
Fibre Type: AFT +0.9/60HE
Dosage: 35Kg/m^3
Total Area: 8,500m^2
Flatness: TR34 4th Edition 2013
Floor Type: Twintec® STRUCTURAL
Slab Thickness: 500mm, 700mm, 1300mm
Concrete: C30/37 MPA
Accomplished Date: July 2025

www.twintecgroup.com

Project Spotlight



Challenges:

Deflection of Structural Slab

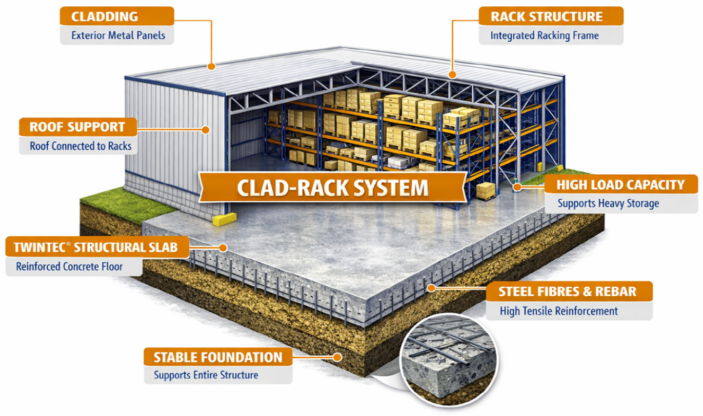
In Clad-rack (rack-supported) warehouses, the slab plays a critical structural role. Unlike conventional warehouses, the racking system supports the building envelope and transfers high concentrated loads directly to the floor slab where slab deflection control is critical for safety and performance.

Punching Shear

Racking structure transfers heavy point loads directly to the floor slab at the locations where the rack legs meet the slab. The concentrated vertical forces can cause punching shear failure, where the concrete around the rack posts is subject to shear stresses that exceed the slab's capacity to resist.

Qcgqkga_lbUglbJm_bq

Gl _ Aj_b+r_ai qwqrck* rfc qrpsarsp_j qj_` pcqgqrq lmr mljw tcprga_j qrmp_ec jm_bq `sr _jqm qcgqkga _lb uglb dmpacq rp_lqkgrrcb rfpmsef rfc p_ai dp_kcq, Qcgqkga jm_bq eclcp_rc snjgdr* qfc_p* _lb nslafgle qrpcqqcq* ufgjc uglb a_sqcq fmpgxmlr_j dmpacq _lb mtcprsplgle _r _lafmp nmglrq,



Twintec's Approach:

Twintec® STRUCTURAL

Twintec® STRUCTURAL is engineered to deliver a high-performance structural slab solution specifically designed for Clad-rack applications, providing exceptional stability and load-bearing capacity. It is developed to withstand high structural loads, ensuring long-term strength, durability, and reliability in demanding environments.

Through the optimised combination of high-tensile steel fibre dosage, a high-quality concrete mix, and localised reinforcement designed to meet structural load requirements, Twintec® STRUCTURAL enables the slab to effectively absorb bending moments and resist shear stresses. This integrated structural approach ensures reliable load transfer, enhanced structural integrity, and superior performance in demanding Clad-rack applications.

SFRC improves load transfer, and ensures better durability. Long-term effects such as creep and shrinkage are also considered to limit differential settlement between rack legs.

By integrating advanced structural modeling softwares, such as DAINA, SAFE, ETABS and SAP2000, Twintec ensures operational stability throughout the full lifecycle of the facility.

Contact the Twintec Saudi LLC business team for further information:

Tel: +966 (0) 13 864 5199 **Email:** info@twintecsaudi.com
Main Office: LEEN Tower, 7F Office 701 & 702, 6789 King Saud Road, Al Safa District, Dammam, Saudi Arabia
Jeddah Branch Office: Aletqan Square, 5F Flat 510, 8150 Al-Madinah Al-Munawarah Road, AR Ruwais District, Jeddah Saudi Arabia
Riyadh Branch Office: 3F Office No.21 Al Khalij Al Arabi Corner Jarir Street, Al Malaz, Riyadh Saudi Arabia

TWINTEC Global Performance