BEKAERT

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CUSTOMER CASE STUDY

Ti Cold worked with Sierra Supply Chain Services and Penta Properties to build a 250,000 square foot cold storage facility in Hamilton, Ontario which implemented Very Narrow Aisle (VNA) pallet racking. This is a state-of-the-art facility with very high racking and stringent floor demands. Bekaert provided a combined reinforcement solution for a specific crack width opening.

The challenge

Critical to the safe and successful operation of this facility's VNA pallet racking system is the warehouse concrete floor slab. It had to meet the highest quality and flatness specifications. In the event of concrete cracking, the owner demanded that the maximum crack width should not exceed 1/32". In addition, high durability was required as warehouse operations using VNA pallet racking require the use of special handling equipment, such as VNA trucks or forklifts, which use repeated travel paths. This highly repetitive use of exactly the same points of the floor will quickly expose any weaknesses in the surface.

The solution

Working closely with the general contractor and engineer of record, the Bekaert team specified a 9-inch combi-slab reinforcement solution. This limited the use of rebar to only the longitudinal direction, while combining it with 25 kg/m^3 of Dramix® 4D 65/60 steel fiber. Furthermore, the Bekaert team recommended working with a low shrinkage concrete mix. The concrete was poured in strips of 13.5 x 450 feet. This solution met the flatness, shrinkage, cracking and durability specifications. By limiting the use of rebar, the speed of construction was accelerated. The owner is very satisfied with the steel fiber solution's performance and is now in discussions for implementation across other facilities where VNA's may be needed.

SIERRA

HAMILTON, ONTARIO, CANADA

PROJECT SPECIFICATIONS

Project type:
Warehouse/distribution center

Application:
Jointless (Combi-Slab)

PARTNERS

- General contractor: Ti Cold
- Flooring contractor: Metro Concrete Works Ltd.
- Designer: Structural Systems Engineering
- Consultant: George Garber

Location: hamilton, Ontario, Canada

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