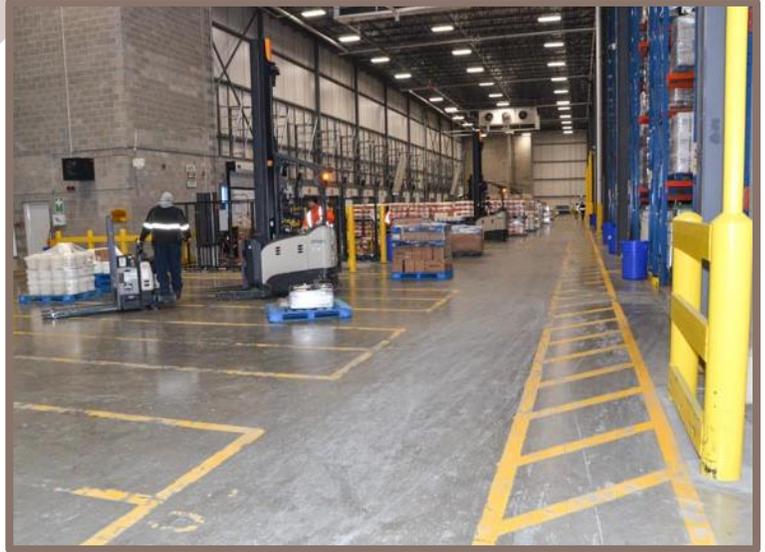


STRUCTURAL DESIGN INNOVATION

GAY LEA DISTRIBUTION FACILITY FREEZER BUILDING



PROJECT CREDITS

OWNER

Orlando Corporation

ARCHITECT OF RECORD

Orlando Corporation

ENGINEER OF RECORD

McIntosh Perry

FLOORING CONTRACTOR

United Floor Ltd.

MATERIAL SUPPLIER

Allmix Concrete Inc.

ADDITIONAL PARTICIPANTS

- BASF Canada Inc.
- Carpenters Union Local 27
- Euclid Chemical
- Ironworkers Local 721

PROJECT FACTS

LOCATION

Brampton, Ontario

YEAR OF COMPLETION

2018

QUICK FACTS

- Design build concrete floors for Gay Lea's 140,000 sq. ft distribution facility in Brampton, ON
- Shrinkage Compensating Concrete slab
- 3,700 m³ of concrete





Project Description

The Gay Lea distribution facility in Brampton, Ontario, is known to be the organization's largest distribution facility in Canada. It has a gross floor area of 140,000 square feet, consisting of both office space and freezer storage. Due to the nature and quantity of products that Gay Lea distributes, turnover and movement within the facility is high, creating significant amounts of traffic and wear and tear on their industrial floor.

In the design phase of this project, the high amounts of traffic needed to seriously be considered in order to ensure that this floor would last for years to come. With this in mind, Orlando Corporation and United Floor Ltd. wanted to bring forth an advanced solution. A shrinkage compensating concrete floor was proposed by United Floor Ltd. to Orlando Corporation with features that would set this project apart from other facilities in Canada. United Floors Ltd. contacted Allmix Concrete in to propose working with them on this project to make this floor a reality.

For the Gay Lea Facility, approximately 3,700 m³ of a shrinkage compensating concrete was supplied by Allmix Concrete Inc. over the course of 3 months. The mix was designed using Type K cement, a constituent of the mix that causes a volume increase in the concrete after settling. It induces compressive stresses in the concrete that are intended to offset the tendency of drying shrinkage to induce tensile stresses.

Within approximately 7 days after pouring, the shrinkage compensating floor expands. Afterwards, it displays shrinkage characteristics like normal concrete, and it returns to approximately its original volume. For industrial floor applications it provides an extremely durable and long-lasting floor solution. The shrinkage compensating concrete floor is a smooth, dense surface

and helps to prevent plastic shrinkage cracks and provide 30-40% greater abrasion resistance based on its hydration characteristics.

The Gay Lea facility is in operation 7 days a week, with over 24 machines operating over the concrete slab daily. In addition to the major performance enhancements of this mix to the end user, the significant reduction of required maintenance on the floor is something that Orlando Corporation and United Floor Ltd. are confident they will realize. Concrete issues such as curling, which occurs due to volume changes throughout the thickness of the slab, are greatly reduced. Curling can lead to additional slab issues including cracking, spalling and damage to vehicle equipment.

Benefits of using Shrinkage Compensating Concrete:

1. Reduction of control joints
2. Reduction in curling
3. 30-40% greater abrasion resistance
4. Dense surface

Orlando Corporation, United Floors and Allmix Concrete have provided a long lasting and durable solution to the Gay Lea Corporation. Allmix Concrete was honored to be affiliated with this project and hope to see this type of application used more in the industry. As the material supplier for this facility we are proud of the hard work and dedication that went into this project and look forward to supplying future projects.

