



The Meat Factory, TMF Food Processing Facility

Stoney Creek, Ontario

LISATM

‘Lisa’ Saves Time and Improves Concrete Flow at The Meat Factory

The Meat Factory, TMF, project consisted of two additions to an existing meat processing facility that is a regulated Canadian Food and Inspection Agency (CFIA). Both being two storey additions, one consisting of office /plant operations on the main floor with offices on the second floor and a gross floor area of 6960 sq. ft. The second consisting of both main floor multi room processing

areas and a second floor production area with a combined gross floor area of 18,818 sq ft.

This project required a concrete curb at the base of the walls of all production and processing areas. Due to the shape of the curb and the requirements that the face of the curb be free from defects and any bug holes which could hold bacteria or contaminants, a special product would be required.

The project required approximately 800 lineal feet of a single side curb and 200 lineal feet of double sided curb.

The first trial was made using a 32MPa C2 exposure concrete with

careful placement and vibration to attempt to reduce the amount of trapped air bubbles in the face of concrete. Approximately 120 lineal feet was poured utilizing a pump and required approximately 48 man hours to place and vibrate/tap the forms. Upon stripping the concrete forms along the vertical face, there was close to a smooth finish with a medium quantity of bug holes yet the lower angled cove and top angle were typical of a poured concrete finish in this type of formwork.

“The mix’s performance was exceptional, it was exactly what we needed for this project”

Jim Tarbutt
President



CBM



The trial curb required an additional 20 man hours to fill the imperfections.

This method and product showed a production rate of 1.76 feet per man hour. Production rate was an aggregate of man-hours to place concrete and man-hours to patch and fill bug holes once concrete forms were removed. (See photos above)

Two additional trials each of approximately 16 lineal feet were made utilizing plasticizers to attempt to produce a better result in finish and also in placement and finishing manpower. While the finished product was slightly better, the placing and vibrating work was equal as the narrowness of the top opening of the form still resulted in a very slow placement process.

Through discussion with Scott Duffield of CBM it was decided to utilize CBM's Self Consolidating Concrete "Lisa" mix. This mix's properties for providing a cleaner finish, ability to flow within a form and require no vibration provided ideal properties to this project.

The first pour of approximately four hundred lineal feet required 12 cubic metres of Lisa and was completed in approximately 4 hours with only three men. The products unique flow capabilities provided a production rate of 33.3 feet per man hour.



Lisa not only flowed easily into the curb form, but around corners, both inside and outside and up to a distance of 115 feet from the location of entry into the form.



When the forms were stripped the resulting finish required very marginal filling or touch up. The photos below show the typical result upon form removal.

Lisa was used for all curbs throughout both main floor and second floor curbs and performed identical each time. In addition to manpower savings, originally the project was estimated to include for 7-8 days of concrete pumping time.

The pumping time was reduced to 2 days.

Lisa produced a very smooth surface with minimal imperfections. Additionally it filled the very narrow point of the cove creating a very clean crisp edge at the joint of the slab on grade and curb.

This project was truly a team effort right from the design stage to the execution of work. All parties did a great job, and it shows.

Project Material Innovation:

The development and use of a specialized concrete mix "Lisa", to improve concrete placement into a constrained form providing a high flow rate and dramatically reducing typical surface imperfections from air trapped against a form. Mix required no vibration.

Project Credits:
Owner: The Meat Factory
Architect: James Christie
Engineer: J. M. Venditti
General Contractor: Tarbutt Construction Ltd.
Concrete Producer: St. Mary's CBM
Concrete Forming: Wellbur Construction Limited

