

Lorenzetti Acres Ltd. Dairy Farm

Hope, BC, Canada

PRODUCT USED:
Hard-Cem®

ENGINEER:

Kerkhoff Engineering Ltd.

CONTRACTOR:

Mardina Construction Ltd.

READY-MIX SUPPLIER:

Lafarge

BACKGROUND

Lorenzetti Acres Ltd. is a family-run dairy operation located in Hope, British Columbia, Canada. Established in 1959, the dairy farm has served Canadians for over 60 years. However, their reliable, calcium-laden service ran into a complication in 2015. At that time, a devastating fire erupted, burning down Lorenzetti Acres Ltd.'s dairy barn.

To recover from this setback, the dairy farm needed to rebuild their barn. With that in mind, Lorenzetti Acres Ltd. chose to construct a 6,503-square meter (70,000-square foot) building. Residing within it would be a loafing barn where cattle could rest and feed and a modern milking parlor.

This structure's construction would also include a standard concrete slab-on-grade with a textured finish, which would provide traction for the cattle. Without any concrete hardening solutions, however, the slab was expected to deteriorate within two years of operation. That presented a dilemma as concrete surface wear is a hazard for cattle. It would be easier for cattle to lose their footing on rough concrete, making the risk of incurring additional veterinary costs and reducing operational efficiency much higher. So Lorenzetti Acres Ltd. needed their poured concrete to eliminate this risk as much as possible.

SOLUTION

To combat the concrete's deterioration problem, Mardina Construction Ltd. proposed that they use the admixture Hard-Cem to integrally harden the concrete. After reviewing the proposal, Kerkhoff Engineering Ltd. was also on board. As a result, the construction team added Hard-Cem at the time of batching to the concrete, significantly reducing field application time. Then, they poured Hard-Cem concrete into the milking and loafing barn slabs, which need to withstand high abrasion and erosion, and the vertical silos, which are subjected to regular high-pressure power washes. After 28 days of the concrete curing, they then used a mini groover with diamond blades to cut grooves that were 13 mm (0.5 in) in width and depth and had 76 mm (3 in) of spacing for the textured traction finish.



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The end results were impressive. By using Hard-Cem to reduce concrete wear and maintain the concrete's traction finish, Lorenzetti Acres Ltd. found their dairy production went up while their operational costs went down. The erosion resistance from Hard-Cem maintained concrete panels, rigorous quality, and cleanliness standards and increased the mechanical and hydraulic functionality of the new dairy barn. That allowed people, animals, and equipment to safely traverse across concrete surfaces. It also reduced equipment wear and tear while preserving operational efficiency, making the new barn a clean, non-hazardous environment built for dairy success.

