

**Concrete Benefits In**

# **AGRICULTURE**



## **THE USE OF QUALITY CONCRETE:**

- ✓ Keeps Livestock Healthier
- ✓ Improves Disease Control
- ✓ Improves Efficiency of Operations
- ✓ Provides Long Lasting, Maintenance-Free Storage & Containment

## Benefits of Quality Agricultural Concrete

Quality Concrete is attained by **specifying the correct material** for the application, **proper construction procedures**, and **proper curing** to ensure the concrete gains strength for durability. Poor quality concrete or poor construction practices can lead to early repair costs and loss of investment. Quality Concrete will ensure your investment is around for many years.



Quality Concrete provides:

- ✓ Long service life.
- ✓ Protection from rooting damage.
- ✓ Safe animal housing.
- ✓ Brighter interiors.
- ✓ Warm floors. In-floor heating systems embedded in concrete slab, warm the floor and provide heat where it is most needed.



- ✓ Reduced bacterial growth and easy to clean surfaces through denser concrete.
- ✓ Abrasion resistant floors.
- ✓ Strong, durable concrete.



- ✓ Concrete paddocks and feed storage areas improve farm efficiency. Specify quality concrete to ensure a durable surface which is resistant to scaling, acids, etc.

**MAKE A SMALL INVESTMENT IN QUALITY CONCRETE TO**

## Make Your Life Easier - Use Quality Concrete

Grain, fruit, corn, bean, potato, tobacco, and other products can take advantage of concrete storage facilities. Whether wet, dry, heated or refrigerated, they can offer you a long maintenance-free life.



The same holds true for equipment storage. Keep your investment in tractors, combines and spreaders, cleaner and dryer than if they sit on dirt floors.

The farm can be a harsh environment. Concrete will provide long lasting, maintenance-free storage and containment.

## Take the Next Step!

- ☞ Take your concrete to a new level; try High Performance Concrete.
- ☞ High Performance Concrete is a concrete which has been optimized to improve performance through increased durability, decreased permeability and porosity, increased abrasion resistance and strength.
- ☞ High Performance Concrete is being used to:
  - densify floor surfaces and reduce the opportunity for bacteria to harbour and multiply
  - further increase the life span of structures/areas exposed to harsh chemicals or products.

**EXTEND THE SERVICE LIFE OF YOUR LARGE INVESTMENT.**

# Quality Concrete Specification and Construction

## Construction

- The strength and durability of concrete is adversely affected by adding water on site to increase workability.
- In cold weather you may have to insulate the forms to protect the concrete in order to provide an adequate curing environment.
- For slabs: a graded and compacted granular base will aid proper drainage and help maintain a consistent slab thickness.

## Finishing Concrete

- Flat surfaces with entrained air should not be finished with steel trowels.
- Make sure all your concrete is properly cured. Concrete at the surface which is not cured may only attain 50% of the strength you specify. A high quality concrete at the surface is critical to long term durability.
- Curing concrete makes it stronger, less porous, and more durable. When moisture is no longer available, *hydration stops*.
- To cure concrete, apply spray-on curing compounds or cover with plastic. These retain the water in the concrete by preventing evaporation. On level surfaces, add water by continuous sprinkling, ponding, or by adding wet coverings such as burlap or straw. On formed concrete, leaving the forms on for a period of time helps contain moisture in the concrete.

## Recommended Minimum Concrete Specifications\*

APPLICATION	RECOMMENDED CONCRETE TO ORDER
Drives and Sidewalks (subjected to salt application), Barnyards, Barn Floors, Manure Storage, Silos or other applications, in corrosive environments.	CSA <b>Class C-2</b> (32 MPa air entrained) CSA <b>Class C-3</b> (30 MPa air entrained)
Walls: Exterior Interior, or other non-corrosive environment	CSA <b>Class F-2</b> (25 MPa air entrained) CSA <b>Class N</b> (25 MPa) CSA <b>Class N</b> (20 MPa)
Footings or other buried concrete protected from the elements.	
High Performance - placement, durability.	Flowing/High Performance Concrete (35-50 MPa - see your supplier)

**These recommended minimums will provide a durable concrete if placed and cured properly.**

\* These recommendations meet or exceed all code requirements.

## References:

- Canadian Plan Services - Specifying Concrete for Agricultural Applications - 9012.
- Canadian Portland Cement Association - Curing, a must for all concrete work - CP010.
- CSA - Canadian Standards Association.
- Ministry of Agriculture and Food - Concrete Yards - 92-036.
- Ministry of Agriculture and Food - Quality Concrete for the Farm - 92-153.

Produced in co-operation with:



READY MIXED CONCRETE ASSOCIATION OF ONTARIO



Contact your local ready-mix producer, RMCAO, CPCA, or CRMCA member.