

GUIDANCE

DO'S AND DON'T'S

Concrete is used extensively around the farm and when it is specified, placed and used correctly it has the potential to last a lifetime with minimal maintenance. The following guidelines will help ensure that your concrete job will perform as intended and give you long-term value for money.

DO

- ▶ Follow the health and safety tips given and wear PPE.
- ▶ Build to the relevant specifications.
- ▶ Select the right concrete mix for each application.
- ▶ Order your concrete from an approved supplier and ask advice on any technical matters.
- ▶ Plan every job before beginning and take into account extremes in weather conditions.
- ▶ Ensure the concrete has the right "workability" or "slump" for the particular end use. If you require a high slump mix or a pump mix (S3) for a particular application specify this when ordering the concrete.
- ▶ Vibrate or screed the concrete sufficiently to remove entrapped air and to ensure a dense, durable and impermeable end product.
- ▶ Always cure concrete slabs, floors and yards by means of spraying with water, covering with plastic or using a spray on curing compound. To ensure proper hydration, strength gain and a durable surface finish concrete should be moist cured for 7 days.
- ▶ Allow the concrete to gain sufficient strength before loading. Properly placed, vibrated and cured concrete will achieve approximately 50% of its design strength in 3 days, 75% in 7 days and 100% in 28 days.

DON'T

- ▶ Don't use an inferior quality or cheaper mix for any job.
- ▶ Don't neglect specification requirements.
- ▶ Don't place concrete in extremes of weather.
- ▶ Don't add water to concrete to make it easier to place. Adding 10 litres of water to one cubic metre of concrete will:
 - ▶ Reduce the strength by 3N/mm²
 - ▶ Increase the shrinkage potential by 10%
 - ▶ Reduce the freeze/thaw resistance by 20%
 - ▶ Have the effect of removing 15 kgs of cement
 - ▶ Reduce the durability & impermeability of the mix
- ▶ Don't delay with placing or vibrating particularly in hot weather.
- ▶ Don't under vibrate concrete as this could lead to honeycombing and voids.
- ▶ Don't powerfloat or over work concrete too soon.
- ▶ Don't leave concrete slabs, floors and yards un-cured as this will lead to rapid evaporation of water from the surface and unsightly plastic shrinkage cracking with potential loss in strength and durability.

The most common causes of problems with concrete in farm projects are:

1. Using the wrong mix
2. Adding water on site to increase workability
3. Failing to cure concrete surfaces

By following the above guidelines you can reduce and eliminate the occurrence of these problems. For more detailed advice on any or all of the above contact our technical department.



www.roadstone.ie

Phone: 01 4041200

Email: info@roadstone.ie



Farmcrete
Concrete for the farm

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FARMCRETE

Farmcrete concrete mixes are specifically designed for use in the construction of farmyards, roadways, milking parlours, livestock buildings, silage pits and structures for containment of silage effluent and farm run-off fluids.

The farm environment places severe demands on concrete due to the aggressive nature of silage effluent, animal waste and heavy machinery traffic. Roadstone – with its nationwide distribution of concrete plants has been continually supplying concrete to the farming sector since 1960. During this long period the company has built up vast experience in supplying the sector and continue to expand their reputation for quality, expertise, reliability and service.

Key Features & Benefits

- ▶ Strong, Durable and long lasting for the agricultural environment
- ▶ Complies with the Department of Agriculture, Food and the Marine specifications
- ▶ Made from local materials manufactured to the highest standards
- ▶ Available in a range of mixes and strengths to suit all exposures and applications
- ▶ Mix design and technical advice available
- ▶ Available in a range of colours

Technical Specification

- ▶ Concrete Mix Specifications
- ▶ S. 100 : Minimum Specification for concrete grades used in agricultural structures. Department of Agriculture, Food and the Marine.
- ▶ S. 101 : Minimum Specification for the structure of agricultural buildings
- ▶ S. 123 : Minimum Specification for bovine livestock units and reinforced tanks
- ▶ I.S. EN 206:2013 – Concrete – Specification, performance, production and conformity

FARMCRETE MIX OPTIONS

Roadstone provide a number of concrete mixes to suit the particular farm application and the specific environmental exposure of each job.

All our concrete mixes are manufactured in accordance with I.S. EN 206 “Concrete - Part 1: Specification, performance, production and conformity. Our Farmcrete mixes are designed specifically to meet the requirements of the Department of Agriculture, Food and the Marine S.100 - 2015 specifications.

The tables below outlines these mixes with their relevant applications.

Mix Description	Typical End Use
S100 Mix A - 45N C35/45 Farmcrete D20 W/C 0.5 Min Cement 360kg	Walled silos, silo slabs, silage aprons, silo channels, purpose built silage effluent tanks.
S100 Mix B - 37N C30/37 Farmcrete D20 W/C 0.55 Min Cement 310kg	For all purposes including; Slurry tanks to which silage effluent may be directed
S100 Mix B - 37N Air Entrained C30/37 Farmcrete AE	In the case of exposed yard slabs where freeze/ thaw action is a concern.

Farmcrete Mix Options

Farmcrete Mix A Options
C35/45 D20 S3 Farmcrete
C35/45 D20 S3 Farmcrete GGBS

Farmcrete Mix B Options
C30/37 D20 S3 Farmcrete
C30/37 D20 S3 Farmcrete GGBS

Farmcrete Mix B Air Entrained Options
C30/37 D20 S3 Farmcrete

Notes

C30/37 = Cylinder Strength/Cube Strength e.g. 37N is now expressed as C30/37
D20 = 20mm Aggregate
D10 = 10mm Aggregate*
S3 = Consistency Class S3: Slump Range 100mm-150mm
AE = Air Entrained

*use concrete with 10mm aggregate (D10) for areas of congested steel reinforcing or where cover is less than 2.5 times aggregate size

The addition of Polypropylene fibres are available on request - The use of fibres helps to reduce plastic cracking and improve surface durability. They are not a substitute for curing, crack control joints or structural reinforcement.

Cut joints at 6 meter centers (both directions) or at a ratio of 2:1 i.e 2 meters wide slab joint at a max of 4 meter centers

Roadstone can also incorporate a proportion of Ground Granulated Blastfurnace Slag, commonly referred to as GGBS, into any of the above mixes of the above mixes if specified.. GGBS is a powder addition that partially replaces cement.



HEALTH & SAFETY

Roadstone are committed to the health and safety of their employees and customers alike and our goal is to have a zero accident culture. The following are some safety tips to minimise the risk of injury when undertaking concrete construction work around the farm.

- ▶ Children are especially vulnerable to farm dangers and must be kept away from construction work and machinery around the farm.
- ▶ Fresh concrete in contact with skin may cause alkali burns or dermatitis. You may not be immediately aware of damage.
- ▶ Wash affected skin with clean water as soon as possible.
- ▶ For affected eyes rinse thoroughly with clean water or eye rinse and seek immediate medical help.
- ▶ PPE should always be worn – long rubber boots when standing in concrete, long trousers and sleeves, waterproof gloves and eye protection.
- ▶ Be aware of the movement of delivery trucks especially when they are reversing and always make yourself visible to the driver.
- ▶ Ensure drivers and machine operators are made aware of overhead power lines and underground cables.
- ▶ Provide an exclusion zone when operating conveyor or pump trucks.
- ▶ Provide trucks with a safe separation distance from trenches and excavations.