

Short Guide
**Agricultural
Applications**

Synthetic Fibre Reinforced Concrete
DURUS[®] Macro Synthetic Fibre

Durus macro synthetic fibres can be used in a wide range of agricultural reinforced concrete applications to replace conventional steel mesh reinforcement.

Application areas

Tracks & Hardstanding Areas

Tracks and hardstanding areas are a proven application area for macro synthetic fibres, saving time and maintaining the required performance through correct design. The use of Durus macro synthetic fibres will eliminate significant risk of damage to machine tyres and livestock injury from exposed steel reinforcement.

Silage Clamps

The material stored in silage clamps can produce acidic liquid as it breaks down. This liquid puts any steel reinforcement used in the structure at high risk of corrosion, resulting in a shortened service life. The use of Durus macro synthetic fibres to replace traditional steel mesh will eliminate this problem. In this application, precast wall sections reinforced with Durus macro synthetic fibres are used extensively in Europe.

Grain Stores

A number of grain stores across Europe have successfully used Durus macro synthetic fibres in place of traditional steel reinforcement in the concrete floor slab. Reduced build time and ease of construction are a significant benefit, whilst ensuring the surface finish and durability of the concrete floor is maintained.

Poultry Sheds

Poultry shed floors are continuously exposed to acidic waste and liquids from birds, putting traditional steel mesh reinforcement at high risk of corrosion and spalling. By using Durus macro synthetic fibres this problem is eliminated and service life is maintained.

Cattle/ Milking Sheds

Exposure to acidic animal slurry and milk poses a high risk of corrosion to traditional steel mesh, which can result in the concrete spalling and breaking up over time. The steel mesh can become exposed, causing injury to livestock and also shortening service life. The use of Durus macro synthetic fibre reinforcement to replace conventional steel mesh will eliminate these problems in this aggressive environment.



Track



Hardstanding area



Silage clamp



Grain store



Poultry shed

Anaerobic Digester Facilities (Biogas Generation)

Anaerobic digester facilities are becoming evermore common in the agricultural sector. Animal slurry and organic waste from maize, fruit and vegetable production is stored and fermented to produce methane gas which can then be used to supplement the energy infrastructure network.

Reinforced concrete pavements are at high risk of prolonged exposure to these liquids, which will attack and corrode conventional steel reinforcement. This will not only reduce the service life of the pavement, but may lead to contamination of the surrounding environment, impacting flora and fauna. Not so with Durus macro synthetic fibres applied to replace steel.

Advantages of Durus macro synthetic fibre reinforcement

Macro synthetic fibre reinforcement will bring significant advantages to the end user. These include:

- Reduced construction time, due to steel fixing not being required. There will be less disruption to working routine.
- Potential cost savings as no steel fixing accessories, delivery and fixing labour are needed.

Disclaimer

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- Significant risks of injury to livestock and damage to machine tyres from exposed steel reinforcement are eliminated.
- Synthetic fibre reinforced concrete can be discharged directly into formwork, eliminating access issues created by insitu steel, and the potential need for pump placement.
- Reinforcement is contained within the fresh concrete on delivery, therefore problems associated with incorrect placement of steel mesh are not a factor, and performance is guaranteed.

Adfil Assistance

Your regional Adfil Technical Sales Manager is available for advice and guidance on all aspects of Durus macro synthetic fibre reinforced concrete. They are on hand to liaise with the client and ready-mix concrete suppliers to ensure the correct specification for any project.

The Adfil team also offers:

- Project design service
- Site support during installation
- Technical support

The team is an approved supplier to a number of Farmers Cooperatives, offering support to their thousands of members with the specification of fibre concrete solutions.



Cattle shed



Anaerobic digester facility



Durus S500