





Adfil Fibres
Agricultural
Applications

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## Reinforced concrete reinvented

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# Synthetic Fibre Reinforced Concrete In Agricultural Applications

DURUS Macro Fibres can be used in a wide range of Agricultural reinforced concrete applications to replace conventional steel mesh reinforcement.

## Challenges

There are many considerations to take into account in agricultural construction. The concrete structures are exposed to the natural elements, they constantly have heavy vehicle loads rolling over them and the products made and stored on agricultural sites are generally live stock which produce highly acidic waste or food based products which could also potentially leach out corrosive materials. Using Macro Synthetic Fibre reinforcement instead of traditional steel mesh you can eliminate the potential of your reinforcement corroding and causing damage to your concrete.



**Lincoln Farm Cow Sheds** 



## Synthetic Fibre Reinforced Concrete In Agricultural Applications



### Solution

Synthetic Macro 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 with regards to there being no steel fixing accessories, delivery and fixing labour needed.
- Problems associated with steel reinforcement corrosion and subsequent reduced service life are not a factor with synthetic fibre reinforcement.
- 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.



## Poultry Sheds

Poultry sheds floors are continuously exposed to acidic waste and liquids from the birds, putting traditional steel mesh reinforcement at high risk of corrosion and spalling. By using Synthetic Macro Fibres, this problem is eliminated and service life is maintained. and fauna.



## Synthetic Fibre Reinforced Concrete In Agricultural Applications



## 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.



Red Lodge



Farm Yard

## Tracks & Hardstandings

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



Gaynes Lodge Farm



# Synthetic Fibre Reinforced Concrete In Agricultural Applications

## 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 Synthetic Macro Fibres to replace traditional steel mesh will eliminate this problem. In this application, Precast wall sections reinforced with Synthetic Macro Fibres are used extensively in Europe.



Wothersome Grange Farm



Corn Grain Store

### **Grain Stores**

A number of grain stores around the UK have successfully used Synthetic Macro 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.



## Synthetic Fibre Reinforced Concrete In Agricultural Applications



## 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 Synthetic Macro Fibre reinforcement to replace conventional steel mesh will eliminate these problems in this aggressive environment.



South Farm Cattle Sheds



Storth Slurry Tank Base

## Slurry Tanks

Adfil Construction Fibres for advise on a suitable Fibre alternative to replace conventional steel mesh. Macro synthetic fibre. Reinforcement is contained within the fresh concrete on delivery, therefore problems associated with incorrect placement of steel mesh was not a factor. Fibres are inert to most chemicals such as animal waste and leachates. They are non-hazardous to livestock on site - which helps to create a safer environment and eliminates any risks.



## **UK Technical Sales**



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PC-ENG-UK-06/2022

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