

# Hucknall Waste Recycling Centre

Nottingham, United Kingdom

Oakfield Recycling wanted to up date and upgrade their materials recycling centre In Hucknall Nottinghamshire. The site recycles all types of materials from concrete to reclaimed soil . The facility has heavy crushing machinery, loading shovels and articulated vehicles using the site.



Project owner  
**Oakfield Recycling**

Product  
**Durus S400 & Fibrin XT**

Function  
**Used in the ground bearing concrete slab for the impact & abrasion values.**

Contractor  
**Oakfield Construction**

Volume  
**600m3 of Concrete**

## Challenge

The challenge was to produce a concrete slab which can with stand the constant use by heavy machiney whilst also replacing the steel mesh in the original design which in time would corrode and lead to further problems such as spalling and eventual failure of the concrete.

## Solution

- The use of Durus Macro Synthetic fibres allowed the removal of the steel mesh which eliminated any risk of corrosion and associated problems.
- The use of Fibrin XT Monofilament fibres increased the impact and abrasion resistance of the concrete slabs to extend durability of slab surfaces.
- The use of Durus Macro Synthetic fibres also improved post failure serviceability of the slabs and as such increased the working life of the facility.



Continuous work during the construction of the slab



Brushed finish with saw cuts at 6 meter spacing's

#### Benefits of the solution

- High risk of accelerated failure and spalling due to corrosion of steel reinforcement over time has been eliminated.
- Design loading requirements have been maintained by the use of DURUS S400 macro Fibres.
- The use of Fibrin XT has resulted in enhanced durability and frost protection.
- Embedded carbon has been reduced, promoting sustainability.
- Health & Safety hazards associated with steel fixing, handling & placement have been eliminated.

#### Installation benefits (optional paragraph heading)

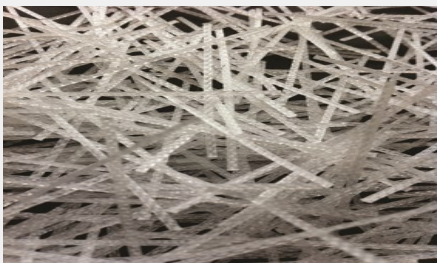
Construction time has been reduced as no steel fixing was required. Concrete could be poured directly into formwork, without the need for pumping due to in-situ steel fabric. Larger areas of pavement can be poured, contraction joints made after initial set (12-24 Hours).

#### Result

Structural requirements for traffic and loadings have been maintained whilst eliminating the risk of accelerated failure due to steel reinforcement corroding

Construction time and Health & Safety Hazards have been reduced. Sustainability has been improved due to the reduction in embedded carbon from using synthetic macro fibres in place of traditional steel mesh.

#### Products used



Durus S400 BS EN 14889 Class 2 Embossed Macro Fibre at a 4Kg per Cubic meter of concrete



Fibrin XT BS EN 14889 Class 1a Micro Monofilament Fibre at 0.910 Kg per Cubic meter of concrete