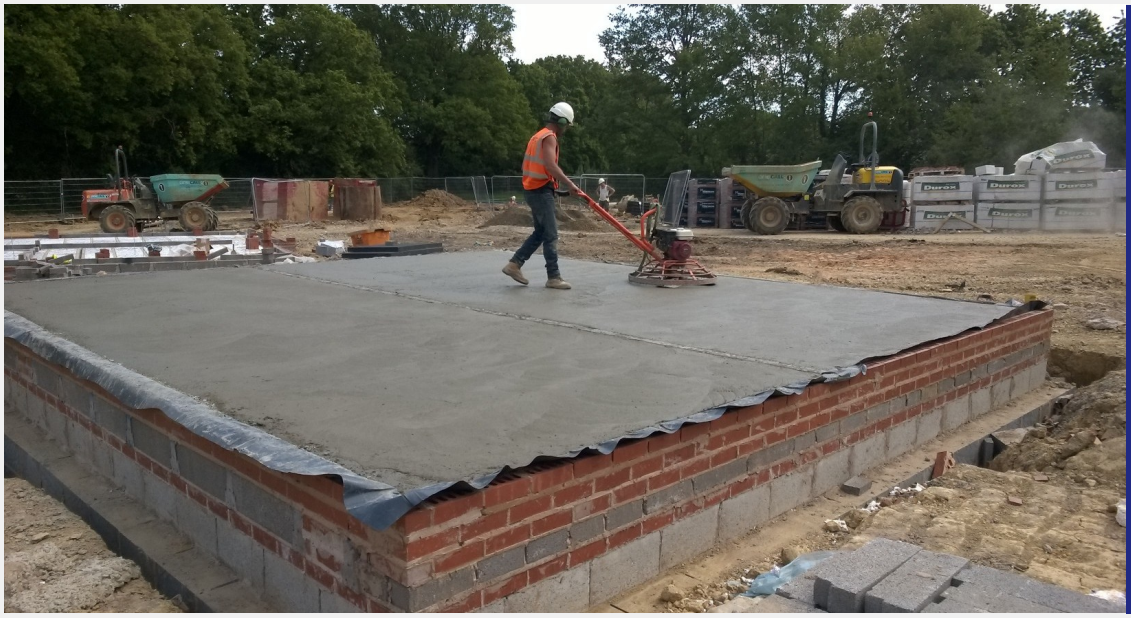
ADFIL Construction Fibres

CASE STUDY

Synthetic Macro Fibre Topping for Block & Beam System

Burgess Hill, West Sussex, UK

With the increase in demand for domestic housing, the use of synthetic macro fibres in structural toppings for block and beam flooring systems presents a good opportunity to significantly reduce embedded carbon, construction time and costs.



Product
DURUS S400

Function
Replace conventional steel mesh in block and beam flooring system topping for domestic housing units.

Contractor
Charles Church Homes

Volume
4kg DURUS S400 / 1m³ of Concrete per House Unit

Challenge

The use of conventional steel mesh reinforcement in the structural topping for block & beam systems increases embedded carbon, reduces construction efficency and presents a health & safety hazard during construction. By replacing the steel with DURUS Synthetic Macro Fibres, these issues are overcome.

Extensive testing was required in order for the NHBC to approve the use of DURUS S400 Macro Synthetic Fibres to replace conventional steel mesh in the block & beam house flooring system structural topping.
In order for this to be adopted by Developers, a BBA Certificate was required to ensure compliance to necessary construction standards.

Solution

- Bonar worked with the block & beam manufacturers to carry out the necessary testing to allow a BBA certificate to be approved and issued.
- Once approved, the NHBC amended Technical Note 17 to detail the use of DURUS S400 Synthetic Macro Fibres in this application.

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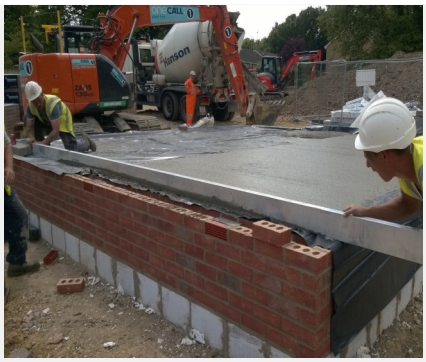
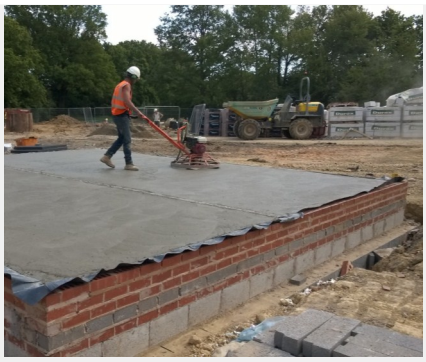
The Fibre Reinforced structural topping can be placed directly onto the visqueen without risk of disturbing steel mesh, giving significant time saving.



Conventional screeding and finishing is easily achieved with the DURUS S400 Macro Synthetic Fibre.



Also Powerfloat finish is easily done with the DURUS S400 Macro Synthetic Fibre.

Benefits of the solution

Construction time is reduced, as there is no requirement to place and fix steel mesh in the topping.
The Health & Safety Systems required to manage the risks associated with steel handling, cutting and placement are no longer needed.
The risk of failure from incorrect steel mesh positioning is also eliminated.
By replacing the steel mesh with DURUS S400 sustainability credentials are greatly improved as embedded carbon has been reduced by around 60%.

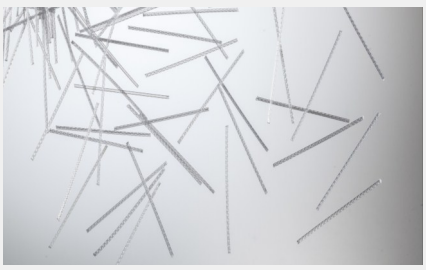
Installation benefits

Construction time is greatly reduced, as the oversite topping can be poured directly onto the flooring system, compacted, screeded and then finished, without having to negotiate steel mesh that can be disturbed and moved.

Result

- The use of DURUS S400 has significantly reduced construction time leading to a more efficient construction programme.
- The health and safety hazards associated with steel handling, cutting and fixing have been eliminated.
- NHBC accreditation has been maintained in line with best practise.
- Sustainability has been improved by saving around 60% embedded carbon when compared to conventional steel mesh.

Products used



DURUS S400 Synthetic Macro Fibre

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