TARMAC

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| **Product** | TOPFORCE |
| **Client** | Shoby Farms |
| **Contractor** | RJ Fenton |
| **Location** | Shoby, Leicestershire |
| **Completion** | Q1 2023 |

# Proven Performance

## FIBRE REINFORCED CONCRETE AGRICULTURAL HARD STANDING

### The challenge

A private landowner wanted to develop a large multi-purpose agricultural facility for both arable and potential livestock use at their farm in Leicestershire. Part of the requirement was external surfacing, which would need to be hard wearing and deliver long lasting durability in this demanding environment, including regular use by heavy agricultural vehicles. The original specification for the hardstanding area used air entrained concrete for frost protection with heavy grade conventional steel mesh reinforcement. The appointed contractor, RJ Fenton, wanted to explore alternative solutions to help minimise construction time and cost, while ensuring a long service life and lasting durability for the client.

### Our solution

After discussions with the contractor, the solution proposed was Tarmac's TOPFORCE fibre reinforced concrete with a combination of synthetic macro and micro fibres. TOPFORCE is a fibre reinforced, high performance concrete, that eliminates the need for some traditional reinforcement. Quicker and easier to place than traditional steel mesh reinforced concrete, TOPFORCE concrete offers excellent long-term durability and performance. This makes it ideal for heavy duty flooring or hardstanding applications. This solution would deliver a saving in both labour and material costs and avoid the budget impact of the rising cost of steel. As well as improving the durability off the finished concrete, the use of macro fibres would also improve sustainability significantly by reducing embodied carbon compared to traditional steel reinforcement.

### Results and benefits

As planned, using TOPFORCE fibre reinforced concrete delivered significant time savings on site. The concrete could be poured directly into the formwork in larger volumes with the saw cut joints made the following day. There was no need for heavy steel mesh to be handled, cut and placed, which reduced construction time and eliminated significant health and safety risks. Work on the external hard standing areas was successfully completed In line with the challenging schedule. Using TOPFORCE also helps to reduce embedded carbon emissions compared to steel mesh reinforced

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concrete. The carbon footprint of concrete reinforced with macro synthetic polypropylene fibres is around 60% lower than that of steel mesh reinforced concrete. There are also additional savings in carbon emissions from avoiding the need to transport the steel mesh to the site.

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