ADFIL
Construction Fibres

Training Support to the Royal School of Military Engineering

Hythe, Kent, United Kingdom

Each year ADFIL provides technical training support to the Professional Engineering Wing (PEW) of the Royal School of Military Engineering Group (RSME Gp) in Chatham, Kent. This support includes technical presentations to the Military Plant Foreman (MPF) intake on the use of construction fibres in Military Civil Engineering projects and also the use of these fibres in the end of course practical construction project exercise. The support is intended to highlight the benefits of synthetic macro fibres over traditional welded steel reinforcement in both Operations and peace time construction

Project owner
PROFESSIONAL ENGINEERING WING, RSME GROUP.

Product
**DURUS S400
Fibrin XT**

Function
DURUS S400 Replaces conventional steel mesh reinforcement to reduce construction time.

Fibrin XT reduces the occurrence of plastic shrinkage cracking and enhances the durability of the concrete by around 30%.

Contractor
MILITARY PLANT FOREMAN COURSE

Background

RSME Gp trains all Military Civil Engineering trades to ensure a high level of expertise and understanding for construction projects all over the world.

Until recently, concrete specifications relied entirely on conventional welded steel reinforcement. These methods are labour intensive and potentially cause logistical issues with supply to isolated locations.
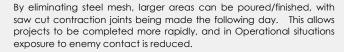
ADFIL have provided learning and technical support to ensure the use of synthetic macro fibres can be used as a sound alternative to welded steel mesh reinforcement in ground bearing slabs for rigid pavements, hardstandings and other infrastructure.

Solution

- Provision of Technical Presentations to MPF and other Civil Engineering related trade courses.
- Project support including provision of a Macro Fibre Reinforced concrete solution for the end of course project.
- Onsite practical support during installation of the MFRC to ensure best practice is understood to further reinforce learning objectives.

By eliminating steel mesh, larger areas can be poured/finished, with saw cut contraction joints being made the following day. This allows projects to be completed more rapidly, and in Operational situations exposure to enemy contact is reduced.

As the reinforcement is dosed into the concrete during batching, the mixer truck can discharge directly into the formwork without the risk of disturbing in-situ welded mesh reinforcement. Logistical benefits come from the there being no requirement to transport and store steel mesh on site.

Benefits of the solution

As there is no the requirement to place and fix welded steel mesh reinforcement, construction time has been reduced as well as the significant Health & Safety hazards associated with steel placement being eliminated.

Installation is significantly easier as formwork can be installed and the fibre reinforced concrete poured directly with the necessary reinforcement contained within it.

In an Operational environment the Military Construction Force is at its most vulnerable to hostile forces during construction tasks. By reducing construction time, risk of enemy contact is reduced.

Logistical requirements are simpler to manage as steel mesh is not needed to be transported to the construction task location.

Installation benefits

The concrete can be poured directly into the formwork in larger volumes, without the risk of disturbing insitu fixed steel mesh. Saw cut contraction joints can then be made the following day.

There is no requirement for heavy steel mesh to be handled, cut and placed, which eliminates significant Health & Safety hazards and reduces construction time.

Result

Invaluable training and updated awareness has resulted from the technical support given to RSME Group, allowing the Military Engineers of the future to have a time saving, risk reducing alternative to traditional welded steel mesh reinforcement

The use of Fibrin XT has improved the durability of the concrete pavement and given frost protection in lieu of AEA.

Products used

DURUS S400 Synthetic Macro Fibre
Replaces conventional welded steel mesh reinforcement

Fibrin XT Monofilament Micro Fibre
Improves the durability of the concrete and provides frost protection in lieu of AEA