BUILDING TRUST

FIBRE REINFORCED CONCRETE SOLUTIONS IN PRECAST APPLICATIONS

SYNTHETIC AND STEEL FIBRE SOLUTIONS CAN BE USED IN PRECAST ELEMENTS, either as the primary reinforcement or in combination with conventional steel bar or mesh. However, it's important to understand the performance limitations of fibre reinforced concrete compared to steel bars or mesh.

When specifying fibre solutions, it's important to consider the following factors:

- Concrete strength
- Concrete durability class
- Concrete surface finish
- The loading and lifting capacity of each element (de-moulding)
- The live loading of the element when in use
- The type and dosage of fibres used

Fibre reinforcement in precast concrete elements provide the following functions:

- Post crack residual flexural strength
- Improve the quality of the cast surface finish by eliminating or reducing segregation and entrapment of concrete around conventional steel reinforcement
- Reduce the occurrence of plastic shrinkage cracking
- Ensure the correct positioning of reinforcement throughout the concrete
- Deliver passive fire resistance by reducing explosive spalling

ADVANTAGES OF FIBRE REINFORCEMENT IN PRECAST CONCRETE ELEMENTS

Time savings

- Reduction or elimination of steel cage construction
- Quicker casting of elements
- Increased production rate
- Reduction in post cast remediation

Cost savings

- By reducing or eliminating steel reinforcement
- Fewer reinforcement fixings needed
- Less manpower required
- Improved efficiency of production facilities




Applications

- Precast tunnel segments
- Precast wall units
- River and sea defences
- Retaining walls
- Pipes and sectional elements
- Precast car park elements

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