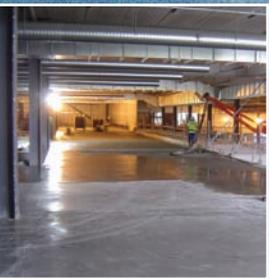


DURUS® FIBRE RANGE

effective steel mesh replacement

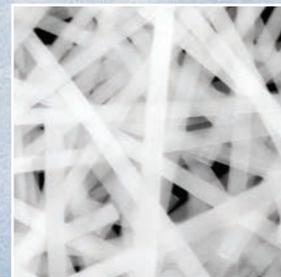


INCREASED PERFORMANCE

INCREASED SAFETY

REDUCED COSTS

REDUCED WORKLOAD



Making steel mesh a thing of the past...



External Hardstandings



Roadways & Pavements



Composite Floors



Tunnels

The Durus fibre range is revolutionising concrete construction.

By adding Durus to the concrete mix, the synthetic fibres eliminate the need for steel mesh with the benefits of increased performance, reduced cost and health and safety advantages.

Durus concrete is more flexible, has a greater resistance to plastic shrinkage cracking and is far easier and safer to use than traditional steel reinforcement. Using Durus fibres will enhance the toughness of the concrete with no risk of the reinforcement corroding or staining the concrete surface.

What is Durus?

The Durus fibres are monofilament fibres that are specifically extruded and precision-cut to form a high performance, synthetic macro fibre. By adding to the mix, Durus increases the toughness of the finished concrete. The finished product has all the strength of traditional steel reinforced concrete, with a 3 dimensional matrix of fibres achieving a more flexible, performance orientated solution.

Proven technology - guaranteed

For total peace of mind, the company's technical division can deliver a complete bespoke design service to specify dosage calculations. To demonstrate absolute confidence in this proven technology, ADFIL, via a qualified consultant engineer is able to offer professional indemnity insurance on any design work undertaken. We can also arrange further guarantees or warranties if required.

Flexible application solutions

This technology can be used in shotcrete, precast and ready mixed concrete applications. Durus can be used in concrete that comes into contact with water intended for human consumption and has satisfied the criteria set out in BS 6920: Part 1: 2000 and complies with the requirements of the Water Regulations Advisory Scheme Tests of Effect on Water Quality. Our unique packaging system allows the fibres to be easily and rapidly dispersed within the concrete either on site or at the concrete batching plant.

Packaged for ease of use

The Durus dosage rates are dependent on the specific application and we offer flexible packing configurations to suit the dosage and type of concrete plant.

Combination Fibre Solutions

Our engineered designs will sometimes combine both macro synthetic fibres and micro synthetic fibres. This will give concrete the optimum performance when it is to be used in critical, harsh environments where life span and structural integrity are key.

Easy Mixing Options

Durus fibres can be added by hand to the truck mixer or forced pan mixer, or can be added using a fibre integration machine. ADFIL's full construction package includes all mixing, laying and finishing instructions. We can also suggest specialist flooring contractors who could complete the project for you, giving you total peace of mind.

..and reducing your costs and workload

Durus benefits over steel reinforcement

- **Easier to handle than steel reinforcement**
Durus is lighter than steel, making it far easier to handle. Freight costs and storage space are also substantially reduced
- **Saves time and money**
Use Durus and there's no time-consuming placing of steel mesh before pouring the concrete and in today's construction world, saving time means saving money. Durus eliminates potential budget and cost issues due to fluctuating steel prices
- **Safer than steel reinforcement**
Steel fibres can protrude from the plastic and hardened concrete, creating a hazardous environment. Durus eliminates these problems
- **Guaranteed accuracy of installation**
Steel mesh can be misplaced, with a dramatic impact on quality and production schedules particularly where it has to be repositioned prior to the concrete pour. Durus cannot be misplaced, eliminating such problems
- **No corrosion**
Unlike steel, Durus is not affected by atmospheric conditions, the alkali environment found in concrete or the presence of moisture; all fundamental causes of corrosion/rusting. This will offer clients the reassurance that projects using Durus will have long-term integrity
- **Easier to add to concrete than steel reinforcement**
Durus is pre-packed in accordance with manual handling regulations. The fibres can be easily and safely added to the concrete
- **Offers a 3-Dimensional Reinforcement System**

Durus technical advantages

- **Cost Effective & Efficient Reinforcement Alternative**
- **Increased Flexural Strength**
- **Increased Impact Resistance**
- **Increased Durability**
- **Increased Tensile Strength**
- **Increased Ductility**
- **Potential for Increased Joint Spacing**

ADFIL Total Solutions - a unique FREE service for designers, architects, engineers and specifiers

Why not take advantage of our free design service - tailored to your specific project. The ADFIL team will work closely with you to supply all calculations and technical specifications. That's in addition to producing a detailed commercial proposal that sets out the financial benefits of using Durus instead of steel. We'll also provide on-site support for any aspect of Durus mixing, placing and finishing. This way, you can be sure you've got the right solution for all aspects of your project.

Responsible design considerations

At ADFIL, we take Health and Safety issues very seriously. The Condam Regulations state that *"The challenge (for designers) is to ensure that H&S considerations are not outweighed by aesthetic and commercial priorities and conversely that H&S does not limit aesthetics. Designers have considerable potential to eliminate hazards and reduce risks associated with construction work, as well as those associated with building use, maintenance, cleaning, and eventual demolition."*

Our Durus fibres are specifically designed to be extremely user friendly and considerably safer than conventional steel reinforcement.

Call us now and take advantage of our FREE design service to find out how much time and money you can save on your construction project using Durus fibres.



Internal Floors



Pre-Cast Concrete



Agricultural



Shotcrete

CASE STUDIES

Case Study 1 - External Concrete Hardstandings



In this particular project the original design was for a 200mm thick slab with C40 air entrained concrete reinforced with one layer of C283 mesh. After reviewing the loading, ground conditions and design criteria an alternative design was suggested. This included the possibility to reduce the slab thickness to 180mm with the addition of 4kg/m² of Durus fibres. Fibrin XT fibres were also used in lieu of the air entraining agent (AEA), and to increase the hardened state properties of the concrete.

Final Specification:

Concrete Mix Design	C32/40
Size of Project	8,000m ²
Fibre Dosage	Durus @ 4kg /m ³ & 0.91kg/m ³ of Fibrin XT fibres

Case Study 2 - Internal Concrete Floor



The original design was for a 200mm thick slab, with C32/40 concrete reinforced with a top layer of A142 steel reinforcing mesh. Adfil worked with the client and contractor a revised design was proposed which eliminated the need for the layer of A142 mesh and all the other associated costs were removed.

Durus enhanced concrete gave the contractor the benefit of placing the concrete both directly from the truck mixer and in restricted areas through a pump.

Health and safety hazards connected with using steel mesh reinforcement were removed and the project was completed 4 weeks ahead of schedule. This enabled the client to open up the processing unit early and increased the Company profit.

Final Specification:

Concrete Mix Design	RC40
Size of Project	16,000m ²
Fibre Dosage	Durus @ 4kg /m ³

Case Study 3 - Precast Concrete Walls



Adfil reviewed several precast products in which traditional steel reinforcing mesh was predominately used. Steel mesh is very labour intensive and can lead to an increased risk of health and safety issues in the precast factory. Due to its nature, steel can corrode/rust and can cause unsightly staining on the surface of concrete. Previously Steel Mesh was only added to reduce damage of the precast elements when they were removed from the mould, transported and placed on site.

Nowadays Durus macro synthetic fibre offers a 3-Dimensional reinforcement matrix which means that the concrete resists impact damage, whilst reducing costs and removing health and safety hazards.

Final Specification:

Concrete Mix Design	C30
Size of Project	10,000m ³
Fibre Dosage	Durus @ 4kg/m ³ & 0.91kg/m ³ Fibrin X-T

Case Study 4 - Water Treatment Works



A UK Water Authority needed a rapid and effective solution that removed the logistical problems associated with using traditional steel mesh. The Contractor needed to minimise labour cost and improve site safety whilst also meeting WRAS (Water Regulations Advisory Scheme).

After the engineer approved our design Durus enhanced concrete was placed inside a covered water tank. The Concrete containing Durus removed the need for steel mesh on the site which meant that manual handling issues were also removed providing a faster building technique.

Final Specification:

Concrete Mix Design	RC40
Size of Project	1600 m ³
Fibre Dosage	Durus @ 5kg/m ³ & 0.91kg/m ³ Fibrin X-T