

Extensia™

Stuarts Industrial Flooring

A **new** innovation in floorslab design, without the need for steel reinforcement. Providing **early** loading, **high** durability and outstanding environmental **performance**



Stuarts
Industrial Flooring Ltd.

Extensia™

Eco friendly, low shrinkage concrete



To cope with heavy loading, provide high surface durability and overcome the compatibility issues of salt and steel reinforcement, Extensia™ was used in a 1,200m² salt barn at Stafford Park, Telford. Installed at 250mm thick, the floor slab was placed in a single eight-hour day with one of our nine Somero laser screed machines. It had one saw cut cross joint in both directions, minimising maintenance for the end user.

Extensia™ offers a design alternative for high performance floor slabs without the need for steel reinforcement significantly reducing the requirement for joints. Used for ground-bearing slabs in industrial, warehouse and commercial applications, it combines low shrinkage with advanced environmental properties - bringing increased design flexibility, rapid construction, easy placement, early loading and lower maintenance costs.

A pioneering innovation in low-shrinkage concrete, Extensia™ combines our own practical expertise with the extensive technical knowledge of Lafarge Readymix - world leaders in the supply of construction materials

New dimensions

Here's how Extensia™ can help you increase productivity and performance:

- Greater design flexibility - thinner section, unreinforced slabs with increased joint spacing
- Fast construction - areas of up to 2,000m² can be laid in a single day with one of our Somero or Compact Manipav laser screed machines
- Earlier loading - with high early age strength gain, Extensia™ slabs can be loaded at just 14 days
- Lower maintenance costs – big savings through fewer joints, control of shrinkage and curling, and high surface durability

High performance

Outperforming conventional concrete through its unique mechanical and shrinkage properties, Extensia™ offers these performance indicators:

- Abrasion resistance – AR Special (BS-8204: part 2 2002)
- Compressive strength – 70N/mm² at 28 days
- Drying shrinkage – 250µm/m at 28 days (at 20°C / 60% RH)
- Guaranteed flexural strength – 6N/mm² at 28 days
- 12 year product guarantee backed by Lafarge – where sub-base preparation is carried out in line with Section 6 of TR34 (2003).

Sustainability

With sustainable construction at the forefront of the industry's agenda, Extensia™ also brings greatly enhanced environmental performance. An independent life cycle assessment carried out by Ecobilan, part of PricewaterhouseCoopers Sustainable Business Solutions, compared the environmental profile of an Extensia™ floor slab with that of a traditional steel fabric or steel fibre reinforced floor slab. Extensia™ performed better than both products, with:

- up to 20% reduction in CO₂ emissions
- up to 46% reduction in coal consumption
- up to 16% reduction in oil consumption
- up to 85% reduction in waste production

This survey has been independently peer reviewed by Gingko 21 & GHA Livigunn.



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DEAN MARLOW, SITE MANAGER, RAYMOND BROWN CONSTRUCTION, SAID: DUE TO THE HEAVY PLANT THAT VEOLIA WILL HAVE IN OPERATION, THE FLOOR SLAB HAD TO BE EXTREMELY DURABLE, WITH VERY HIGH ABRASIVE AND IMPACT RESISTANCE AND AS FEW JOINTS AS POSSIBLE. EXTENSIA WAS THE ONLY ONE TO TICK ALL THE BOXES. THE RESULTS WERE A FLOOR WITH NO PLASTIC CRACKING AND COMPRESSIVE AND FLEXURAL STRENGTH IN EXCESS OF WHAT WE EXPECTED. STUARTS HAVE ACHIEVED A FLOOR THAT LOOKS GOOD AND MEETS OUR REQUIREMENTS IN EVERY RESPECT, WITH A SAVING IN COST, BUT IT IS ALSO ENVIRONMENTALLY SUSTAINABLE, WHICH THESE DAYS HAS TO BE A MAJOR CONSIDERATION.

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Compared with a conventional approach, Extensia™ can offer a typical warehouse floor slab in a shed of c12,800m²:

- A construction programme of just two weeks on site
- “Jointless” panels of 20m x 20m - enabling easier co-ordination of racking systems
- A reduction of approximately 3,200 metres of sawn induced joint - saving joint sealant and lifetime maintenance
- Early loading at 14 days - saving two weeks off a traditional construction programme
- High surface durability - achieving AR Special without the use of a dry shake topping



Product Benefits

Greater **design flexibility** with increased joint spacing

Faster construction

Earlier loading

Lower maintenance

Sustainable construction with up to **20% reduction in CO2 emissions** and up to **85% reduction in waste** production

Finished floor for Veolia, demonstrating reduced joint spacing



Our techniques & services

- Large pour ground bearing floors
- Large pour 'suspended' pile supported floors
- High tolerance flooring
- External concrete roadways
- Upper floor construction on concrete planks and metal decks
- Traditional and flowing screeds
- Specialist plant and occupational training

Our products

- Steel bar and fabric reinforced floors
- Extensia concrete
- Steel fibre reinforced floors
- Floor heating and cooling

About Stuarts

Experts in industrial flooring since the mid 1800's, we're the UK market leader in in-situ concrete flooring and the largest independent UK contractor in our sector. Privately owned, we deliver two million square metres of precision concrete floor every year through our nationwide team of more than 165 operatives, nine laser screed machines and associated plant. Equally at home on ground, upper floor and external concrete projects, we invest continually in new innovations to bring our customers the best.

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