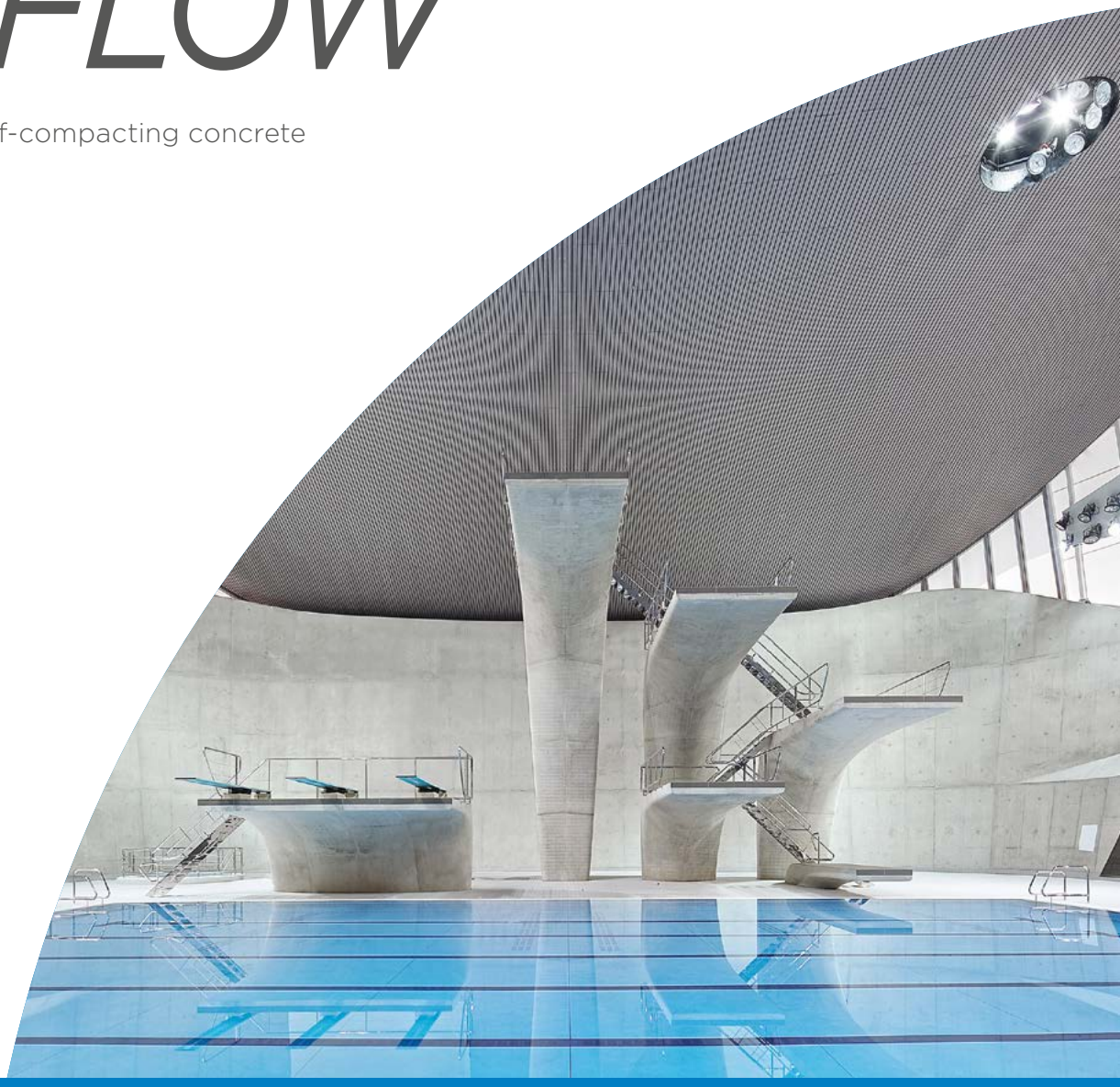
TARMAC

TOPFLOW

The ideal free-flowing, self-compacting concrete



INTRODUCTION

Every project is different. Some are more technical, others more aesthetic. Whatever the challenge, all must be completed on time and on-budget.

While conventional compacted concrete has its limitations with placement often requiring considerable manpower, machinery and time, TOPFLOW provides solutions, fast.

Highly fluid, TOPFLOW is the ultimate self-compacting concrete. It can be poured quickly, flowing and spreading effortlessly to provide an exceptional, highly aesthetic finish. And it's not just time and money that can be saved; TOPFLOW also reduces noise and eliminates vibration, considerably improving conditions on site.

HOW IT WORKS

TOPFLOW uses innovative mix technology to combine the benefits of two seemingly opposite physical properties; fluidity and stability.

Fluidity is essential to provide easy concrete placement and a high-quality finish with minimum effort. Stability is necessary to prevent segregation. Together, this dynamic fusion delivers the ultimate free-flowing, self-compacting concrete.

THE SCIENCE OF CONCRETE

TOPFLOW's product formulae are a culmination of the latest discoveries in organic chemistry, mineral chemistry and fluid mechanics. It is these innovations that allow TOPFLOW to retain fluidity for more than two hours with no need to add water on site while achieving early compressive strength that is comparable to conventional concrete.

The strength of TOPFLOW lies not just in its fluidity but in its flexibility. It is suitable for a wide range of applications, including horizontal, vertical and complexly shaped structures.

TOPFLOW HORIZONTAL

- Enables the rapid and effortless construction of slabs and floors
- High finishing characteristics and surface quality eliminate the use of power floating
- Floor finish tolerance to BS 8204-1 SR2

TOPFLOW CONCRETE

- Specially designed to flow easily through congested heavily reinforced areas
- Meets the demands of all construction types
- Self-compacting for use in all mass fill concrete foundation applications
- Eco mixes available

TOPFLOW TRENCHFLOW

- Reduces labour overheads – typically one man can place, level and finish
- Delivered in highly fluid form with high deformability, allowing quick changes of direction and easy flow around the foundation trench
- Self-compacting for use in all mass fill concrete foundation applications
- Can be formulated to meet up to DC-3 Sulphate resistance classification
- Eco mixes available

TOPFLOW ARCHITECTURAL

- Exceptional quality on vertical applications with no remedial work
- Mix is specified and designed for each project
- Placing techniques and strength can be tailored to suit project requirements
- Advanced technology for the highest surface quality
- High fluidity replicates shape and texture of formwork to match complex design applications


THE
HEPWORTH
WAKEFIELD

THE
HEPWORTH
WAKEFIELD

BENEFITS

FAST FLOWING

Free flowing TOPFLOW concrete can be placed quickly, with the material consolidating easily and effortlessly into the required pour locations.

SMOOTHER SURFACES

TOPFLOW provides an excellent, smooth surface quality that can be laid perfectly flat for slabs and floors, eliminating the need for floating.

EASIER PLACEMENT

Placement is not just quick, it's easy. Fewer pour points, less formwork, reduced manpower, no vibration, excellent surface finish and flexible applications make TOPFLOW easy to work with to speed up your construction schedule.

TOTAL FLEXIBILITY

Whatever your project, there is an TOPFLOW for the job. For horizontal applications its self-levelling qualities enable fast coverage of large surfaces. Complex vertical constructions can be filled simply and quickly, while it can also be easily used alongside reinforcing cages for deep foundations.

REDUCED CARBON EMISSIONS

The carbon footprint of concrete reinforced with macro synthetic fibres is around 60% lower than that of steel reinforced concrete.

NO VIBRATION

By eliminating vibration and greatly reducing noise pollution, working conditions on-site are greatly improved, while pours can be safely carried out even in built-up environments.

APPLICATIONS

TOPFLOW PRECAST

- Developed specifically to suit the demands of precasting
- Bespoke solutions can be tailored to individual requirements
- Advanced technology for the highest surface quality
- No vibration required
- High early strength and high final strength versions available
- Expert advice and guidance

TOPFLOW FIBRE

- Mix incorporates macro-synthetic or steel fibres
- Cost-effective solution to replace crack-control mesh
- Significant on-site health & safety benefits
- Provides uniform multi-directional concrete reinforcement
- Design service available
- Enhanced performance over the equivalent grade of conventional concrete

TOPFLOW FIBRE MACRO

- Replaces most grades of A-type crack-control top mesh
- Suitable for ground-bearing or structural topping applications
- Greater robustness, crack control and resistance to plastic shrinkage cracking
- Enhances impact, abrasion and shatter resistance of the finished concrete

TOPFLOW DECK

- Approved for use in conjunction with composite steel decking systems including ®Tata Comflor, ®CMF Metfloor and ®Lewis
- Fibre-deck options are also available including design service if required, eliminating the need for installation of crack-control mesh
- Enhanced flowing and self-compacting properties ensure ease of installation over difficult profile shapes
- Expert advice and guidance

TOPFLOW PILING

- Specially designed, cost-effective, self-compacting mix
- Enables easier placement of reinforcement cages within the poured pile
- High early strength and high ultimate strength mixes available
- Excellent workability retention provides greater on-site flexibility
- Efficient pumping characteristics
- High sulphate resisting mixes available (up to DC-3)
- Eco mixes available

TOPFLOW FIBRE STEEL

- Replaces all A-types of mesh, top and bottom and also some heavier mesh types
- Suitable for heavy duty ground bearing or suspended slab applications
- High tensile strength results in increased load-bearing capacity

CASE STUDY

London Bridge Station
London

CHALLENGE
As part of the redevelopment of London Bridge Station, the main contractor required a very high specification of finished concrete to the main exposed columns and beams within the finished station. This presented a challenge in terms of both the timescales involved and in meeting the expectations of client and architect.

SOLUTION
Due to the high specifications of the finish required, it was decided to explore the use of self-compacting concrete (SCC). Tarmac was subsequently contacted to propose an SCC solution, in this case TOPFLOW and, to undertake trials. We were also able to provide detailed information on mix design, placement methodology and formwork release agents, that we felt would greatly improve the finish and quality. In total four trials were undertaken with the local London team working closely with Tarmac's product specialists to further fine-tune the TOPFLOW mix into the exact performance that the contractor was looking for.

RESULT
Tarmac was awarded the contract comprising some 1,500m^3 of TOPFLOW Architectural concrete to be supplied over 18 months in three main phases.

Following a successful first pour in August 2013, a concrete finish of the highest order was achieved with the contractor and architect both stating the result exceeded expectations.

In addition, as a direct result of this work, further contracts involving TOPFLOW Architectural SCC have been awarded to Tarmac on London's CrossRail developments.

CASE STUDY

The Hepworth Gallery
Wakefield

CHALLENGE
Sterling prize winning architects David Chipperfield were commissioned to design a bold and striking structure to be a fitting home for some of the UK's finest art. Known for their challenging use of concrete structures, their design featured a series of smooth, coloured concrete trapezoidal blocks with striking forms throughout.

SOLUTION
Due to the high levels of complexity and performance demanded, only one concrete answered the brief; TOPFLOW self-compacting concrete. The bespoke aubergine colour called Hepworth Brown was developed and complex trials were undertaken to achieve the optimum finish and colour uniformity.

RESULT
As the first large full-scale construction in the UK to utilise coloured TOPFLOW, the Hepworth Gallery is a stunning example of how spectacular results can be achieved when architect, main contractor and concrete supplier all work as one from the inception of a project.

CUSTOMER COMMENT
"The consultative and technical nature of Tarmac's approach was invaluable in helping to realise the material concept into architecture. Their early involvement was key to the successful development of high quality architectural concrete supplied for the building facades and roof."

Dean Pike, Lead Project Architect, Hepworth Gallery, David Chipperfield Architects

FAQs

Why choose TOPFLOW free-flowing self-compacting concrete over conventional compacting concrete?

Conventional compacted concrete has limitations with placement often requiring considerable manpower, machinery and time. Highly fluid, TOPFLOW is the ultimate self-compacting concrete. It can be poured quickly, flowing and spreading effortlessly to provide an exceptional, highly aesthetic finish.

What applications can it be used in?

TOPFLOW concrete can be used in most applications that require a readymix concrete from footings and floor slabs to precast applications in some of the most prestigious bespoke projects.

How fast is fast?

In comparison to the normal methodology of placing concrete, TOPFLOW can be rapidly placed speeding up the process.

Self-compacting?

That's right. TOPFLOW provides an excellent, smooth surface quality that can be laid perfectly flat for slabs and floors, eliminating the need for vibration and power floating. TOPFLOW Architectural can give a blemish-free surface with virtually no defects in vertical and horizontal applications.

Why is it so easy to place?

Fewer pour points, less formwork, reduced manpower, no vibration, excellent surface finish and flexible applications make TOPFLOW easy to work with to speed up your construction schedule.

How does it improve conditions on site?

By eliminating vibration and greatly reducing noise pollution, working conditions on-site are greatly improved, while pours can be safely carried out even in built-up environments.

How long does it stay fluid for?

TOPFLOW can be specified exactly for your requirements and can stay fluid for up to six hours in specific applications.

MORE ANSWERS

For more information about TOPFLOW contact your local regional office or visit **TARMAC.COM/TOPFLOW**
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